```
GenCore version 5.1.6

Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

Run on: November 17, 2003, 08:06:47; Search time 20 Seconds (without alignments)
322.165 Million cell updates/sec
Title: US-09-506-978-1
Sequence: 391
Sequence: 1 GGRGGLGGRGKCPSNEIFSR..........CRLGYLRNKKKVCVPRSKCG 67
Scoring table: BLOSUM62
Gapop 10.0, Gapext 0.5
Searched: 283308 seqs, 96168682 residues
Total number of hits satisfying chosen parameters: 283308
```

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Datahase . DID 76.*

Database : PIR 76:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	hypothetical prote	l prot			zonadhesin - mouse	protein B0238.12 [_	hypothetical prote	zonadhesin - pig	hypothetical prote	hypothetical prote	c	alpha tectorin - c	scavenger receptor	protein C10G8.4 [i	IgG Fc binding pro	hypothetical prote		hypothetical prote	-	hypothetical prote	Ω	hypothetical prote		Balbiani ring 3 pr	r T	u	mucin, submaxillar	chymotrypsin/elast
SUMMARIES	ПD	2165	T27318	T27319	T30197	T42215	H89044	T24293	T24294	T34022	T15609	T16574	VWHU	T30243	T17405	C89046	T30257	T25513	T28803	T24604	JE0095	T15610	S52093	T19130	T15608	808167	A34102	A54895	T03099	807127
	DB	7	0	~	N	~	7	N	N	N	~	~	~	N	~	N	N	N	7	7	N	~	ď	ď	N	~	7	7	~	7
	Query Match Length	245	561	626	2155	5376	166	802	949	2476	137	140	2813	2120	1036	98	1023	192	195	249	1373	135	3133	1642	145	1700	780	1513	N	63
d	Query Match	34.0	30.2	30.2	28.9	28.9	28.5	28.0	28.0	27.5	25.7	25.6	25.1	24.9	24.7	24.2	24.2	23.8	23.7	23.5	23.3	23.1	23.1	22.9		•	21.6	21.6	21.4	20.6
	Score	-	118	118	113	113	111.5	109.5	109.5	107.5	100.5	100	86	97.5	96.5	94.5	94.5	93	92.5	92	16	90.5	90.5		88.5	86	84.5	d.	(1)	80.5
	Result No.		7	m	4	Ŋ	9	7	ω	δ	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29

hypothetical protein Y69H2.3a - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: Cact-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
C;Accession: T27318
R;McMurray, A.
submitted to the EMBL Data Library, August 1997
A;Accession: T27318
A;Accession: T27318
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Residues: J-561 <WIL>
A;Residues: 1-561 <WIL>
A;Residues: 1-561 <WIL>
A;Cross-references: EMBL: 298877; PIDN: CAB54472.1; GSPDB: GN00023; CESP: Y69H2.3a
A;Gene: CESP: Y69H2.3a
A;Gene: CESP: Y69H2.3a
A;Map position: 5

ZK353.2 protein - insulin-like growt hypothetical prote integumentary muci hypothetical prote chymotrypsin/elast hypothetical prote hypothetical prote metallothionein 10 hypothetical prote metallothionein 10 hypothetical prote mypothetical prote mypothetical prote dypothetical prote hypothetical prote dypothetical prote dypothetical prote can bypothetical prote dypothetical prote can bypothetical prote dypothetical prote can bypothetical prote dypothetical prote dy	ALIGNMENTS	rotein F32D8.3 - Caenorhabditis elegans -1999 #sequence_revision 15-Oct-1999 #text_change 04-Mar-2000 21654 -1894 #sequence_revision 15-Oct-1999 #text_change 04-Mar-2000 21654
\$44658 433837 4733837 47308337 508572 508572 4751773 4751773 4751773 475175 475175 475175 475175 475175 475175	ALIG	Caenorhabditi gans revision 15-Oc brary, June 199 ated from GB/EM ated from GB/EM 31; PIDN:CAA984 F32D8 18; Pred. No. 7; Mismatc CDGRCQRFCPNVVPK ACESTCNNPD
0000000000000000		3 - Caellegans ce_revii. Library Library 4031; P: e F32D8 selegg ve F32D8 celegge ve F32D8
1371 1371 1500 1500 4900 63 927 72 2192 253 348 348 349		octin F32D8.3 - Calcinabilitis elegans 1999 #sequence_rev. 1654 minary; translated minary; translated minary; translated source: Clone F32D 5 7 83/3 Caenorhabditis elec conservative dGRGRGRCPSNEIFSRCDGR GGRGRCPSNEIFSRCDGR GGRGRCPSNEIFSRCDGR GGRGRCPSNEIFSRCDGR GGRGRCPSNEIFSRCDGR GGRGRCPSNEIFSRCDGR GGRGRCPSNEIFSRCDGR GGRGRCPSNEIFSRCDGR GGRGRCPSNEIFSRCDGR FRSK 65 FRFK 116
6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6		ll protein F32D8. Caenorhabditis e Caenorhabditis e Cot.1999 #sequen 1: T21654 1: T216
8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
0 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		RESULT 1 T21654 hypothetical protein F32D8.3 C;Species: Caenorhabditis el. C;Accession: T21654 R;Wilkinson, J. S;Wilkinson, J. A;Reference number: Z19454 A;Accession: T21654 A;Accession: T2164 A;Accession:

```
protein B0238.12 [imported] - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 10-May-2001 #sequence_revision 10-May-2001 #text_change 10-May-2001
C;Accession: H89044
R;anonymous, The C. elegans Sequencing Consortium.
Science 282, 2012-2018, 1998
A;Title: Genome sequence of the nematode C. elegans: a platform for investigating bi A;Title: Genome sequence of the nematode C. elegans: a platform for investigating bi A;Note: see websites genome.wustl.edu/gsc/C_elegans/ and www.sanger.ac.uk/Projects/CA;Note: published errata appeared in Science 283, 35, 1999; Science 283, 2103, 1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: GB:chr_V; PIDN:AAB65990.1; PID:g2315490; GSPDB:GN00023; CESP:B02
                                                                                                                          sperm-specific membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4743 KCPANSLYTHCLPTCLPSCSN--PDGRCEGTSHKAPSTCREGCVCQPGYLLN-KDTCVHK 4799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  84
R;Gao, Z.; Garbers, D.L.
J. Biol. Chem. 273, 3415-3421, 1998
A;Title: Species diversity in the structure of zonadhesin, a sperm-specific n A;Reference number: Z22080; MUID:98123114; PMID:9452463
A;Reterns: T42215
A;Accession: T42215
A;Actus: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Molecule type: mRNA
A;Residues: 1-5376 <GAO>
A;Cross-references: EMBL:U97068; NID:g3327420; PID:g3327421; PIDN:AAC26680.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hypothetical protein T01D3.3a - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27 GOVGGGORLPCRGRNEBYKTCGTACEPSCTN--PNPMCTKOCINNVCQCRSGYVRNBITR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11 KCPSNEIFSRCDGRCQRFCPNVVPKPLC-----IKICAPGCVCRLGYLRNKKKVCVPR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 GGLGGRGKCP---SNEIFSRCDGRCQRFCPNVVPKPLCIKICAPG-CVCRLGYLRNK-KK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 166;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 28.9%; Score 113; DB 2; Length 5376; Best Local Similarity 37.5%; Pred. No. 0.004; Matches 24; Conservative 8; Mismatches 22; Indels 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Description: functions in multiple cell adhesion processes A; Note: found exclusively on the apical region of the sperm head C; Keywords: cell adhesion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; Score 111.5; DB 2;
; Pred. No. 0.00043;
11; Mismatches 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C,Accession: T24293
R,Steward, C.
submitted to the EMBL Data Library, October 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28.5%;
36.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 36.8%
Matches 25; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        59 VCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OCVRQAQC 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Residues: 1-166 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4800 NQCG 4803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Accession: H89044
A;Status: preliminary
A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64 SKCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A, Map position: 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Map position: 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Gene: Zan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C, Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
T24293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                အ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cipacies: Mus musculus (house mouse)
Cipacies: Mus musculus (house mouse)
Cipacies: Mus musculus (house mouse)
Cipacies: No. 212-1999 #sequence_revision 22-Oct-1999 #text_change 21-Jul-2000
Elegan, P.K.; Rau, A.; Keene, J.N.; Richardson, G.P.
J. Biol. Chem. 272, 8791-8801, 1997
A.Title: The mouse tectorins. Modular matrix proteins of the inner ear homologous to characteristic mumber: Z20771; MulD:97236843; PMID:9079715
A.Accession: T30197
A.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Map position: 5
A;Introns: 183/1; 247/1; 312/1; 353/1; 383/1; 429/1; 453/2; 522/1; 546/2; 586/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        hypothetical protein Y69H2.3b - Caenorhabditis elegans
C.Species: Caenorhabditis elegans
C.Species: Caenorhabditis elegans
C.Species: T2-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
C.Accession: T27319
B.McMurray, A.
Submitted to the EMBL Data Library, August 1997
A.Reference number: Z20343
A.Accession: T27319
A.Accession: T27319
A.Status: preliminary; translated from GB/EMBL/DDBJ
A.Residues: 1626 < WILL>
A.Residues: 1626 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2onadhesin - mouse
N;Alternate names: sperm-specific membrane protein
C;Species: Mus musculus (house mouse)
C;Species: 03-Duc-1999 #sequence_revision 03-Dec-1999 #text_change 03-Dec-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  123 CPVNEVSNECHNPCTEKKCPOKNAPQVNCLMACQVGCSCMDGFVRNNQGVCVKEAEC 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67
                                                                                                                                                                                                                                                                       99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12 CPSNEIFSRCDGRC-QRFCPNV-VPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKC 66
    A;Introns: 183/1; 247/1; 288/1; 318/1; 364/1; 388/2; 457/1; 481/2; 521/3
                                                                                                                                                                                                                                                                   12 CPSNEIFSRCDGRC-QRFCPNV-VPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KCPSNEI FSRCDGRCORFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28.9%; Score 113; DB 2; Length 2155; llarity 38.6%; Pred. No. 0.0021; Conservative 7; Mismatches 26; Indels
                                                                                           Length 561;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23; Indels
                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match

30.2%; Score 118; DB 2;
Best Local Similarity 36.8%; Pred. No. 0.00027;
Matches 21; Conservative 11; Mismatches 23
                                                                                      30.2%; Score 118; DB 2; 36.8%; Pred. No. 0.00025;
                                                                                                                                                                            11; Mismatches
                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 22; Conserv
                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alpha tectorin - mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Genetics:
A;Gene: CESP:Y69H2.3b
                                                                                                                                                                            21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     983
                                                                                           Query Match
                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                gg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gg
                                                                                                                                                                                                                                                                       ò
```

3;

```
A,Accession: T16574
A,Status: preliminary; translated from GB/EMBL/DDBJ
A,Status: preliminary; translated from GB/EMBL/DDBJ
A,Molecule type: DNA
A,Residues: 11-140 < WOH>
A,Cross-references: EMBL:U29377; NID:g868173; PID:g868180; PIDN:AAA68717.1; CESP:K05F
A,Experimental source: strain Bristol N2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A,Cross-references: EMBL:U50311; NID:g1226295; PID:g1226303; PIDN:AAA92313.1; CESP:C2 A,Experimental source: strain Bristol N2 C;Genetics:
C;Genetics:
A;Gene: CESP:C25E10.8
A;Introns: 1/3; 19/1; 42/3
                                                                                                                  1455 KCPSGSSYSTCANPCPATCLSLNNPSYCPSTLP-----CAEGCECQKGHILSGTS-CV 1506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             52 BCOKHEHHLICGPERHCDRTCENLFSPPHCLNHLHHAKCYFPRCVCNDGYVRSEKGICIR 111
                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11 KCPSNBIFSRC--DGRCORFCPNVVPKPLCI-----KICAPGCVCRLGYLRNKKKVCVP 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  hypothetical protein K05F1.10 - Caenorhabditis elegans Cispecies: Caenorhabditis elegans Cjapecies: Caenorhabditis elegans Cjate: 20-Sep-1999 #sequence_revision 20-Sep-1999 #text_change 20-Sep-1999 Cjacession: T16574 Figholdmann. P. Riwohldmann. P. Submitted to the EMBL Data Library, June 1995 A;Description: The sequence of C. elegans cosmid K05F1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     hypothetical protein C25E10.8 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 20-Sep-1999 #sequence_revision 20-Sep-1999 #text_change 20-Sep-1999
C;Accession: T15609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KCPENETFFRCGTACEPTCEKPGPRP-CTRQCIVNVCQCSSGFVRNGYR-CTELKEC 135
                                                                    -----QRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKVCV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11 KCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPG-CVCRLGYLRNKKKVCVPRSKC 66
17; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 2; Length 137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25.6%; Score 100; DB 2; Length 140; 32.8%; Pred. No. 0.0051; ive 10; Mismatches 25; Indels
Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        submitted to the EMBL Data Library, February 1996
A; Description: The sequence of C. elegans cosmid C25El0.
A; Reference number: 218376
A; Actession: T15609
A; Status: preliminary: translated from GB/EMBL/DDBJ
A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25.7%; Score 100.5; DB 2; 36.8%; Pred. No. 0.0045; Mismatches 26;
18;
Mismatches
6
                                                                        11 KCPSNEIFSRCDGRC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
22; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Reference number: Z18537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ouery Match
Best Local Similarity
.....hes 21; Conserva
                                                                                                                                                                                                                                                                                             1507 PLSQCG 1512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
es 21; Conserv
                                                                                                                                                                                                                 62 PRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Residues: 1-137 <BRA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 112 PSHC 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Gene: CESP: K05F1.10
A; Introns: 31/3; 77/2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        63 RSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R; Bradshaw, H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; Genetics:
Matches
                                                                                                                                         요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ext
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cispecies: Sus scrofa domestica (domestic pig)
Cispecies: Sus scrofa (domestic pig)
Ribardy, D.M.; Garbers, D.L.
A. Bardy, D.M.; Garbers, D.L.
A. Riberton Description (domestic protein that binds in a species-specific manner to the egg of the sperm member: Z21464; MUID:96064658; PMID:7592795
A. Reference number: Z21464; MUID:96064658; PMID:7592795
A. Molecule type: mRNA
A. Molecule type: mRNA
A. Molecule type: mRNA
A. Residues: 1-2476 A. MARA
A. Molecule type: mRNA
A. Residues: 1-2476 A. MARA
A. Molecule type: mRNA
A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hypothetical protein T0103.3b - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
C;Accession: T24294
R;Sreward, C.
submitted to the EMBL Data Library, October 1996
A;Accession: T24294
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Accession: T24294
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Residues: 1-949 < MIL>
A;Residues: 1-949 < MIL>
A;Residues: 1-949 < MIL>
A;Residues: Ceferences: EMBL:Z81110; PIDN:CAB03260.1; GSPDB:GN00023; CESP:T01D3.3b
A;Experimental source: clone T01D3
C;Gentics:
A;Gentics:
A;Gentics:
A;Gentics: 74/1; 126/1; 161/2; 221/1; 268/1; 347/2; 640/1; 820/3; 919/2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ű,
                      A;Accession: T24293
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-802 < WIL>
A;Cross-references: EMBL:Z81110; PIDN:CAB03259.1; GSPDB:GN00023; CESP:T01D3.3a
A;Experimental source: clone T01D3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       229 CGANEQYSACFSSCQPSCQD-PSTPACPAPGCQPGCICLPGYIRRDSSPRSACVPRGLC 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12 CPSNEIFSRCDGRCORFCPNVVPKPLC-IKICAPGCVCRLGYLR----NKKKVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12 CPSNEIFSRCDGRCQRFCPNVVPKPLC-IKICAPGCVCRLGYLR---NKKKVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Description: may be involved in sperm adhesion to the zona pellucida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 107.5; DB 2; Length 2476; Pred. No. 0.0079;
                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 109.5; DB 2; Length 802;
Pred. No. 0.0022;
7; Mismatches 24; Indels 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 2; Length 949;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28.0%; Score 109.5; DB 2; Length 39.0%; Pred. No. 0.0025; Live 7; Mismatches 24; Indels
                                                                                                                                                                                                                                                       C;Genetics:
A;Gene: CESP:T01D3.3a
A;Map position: 5
A;Introns: 74/1; 121/1; 200/2; 493/1; 673/3; 772/2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 28.0%;
Best Local Similarity 39.0%;
Matches 23; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
       A; Reference number: Z19870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 23; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A, Gene: Zan
C, Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         T24294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

э. •

2;

```
A; Molecule type: protein
A; Residues: 1606-1617 < DEN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: mRNA
A; Residues: 2731-2813 <LYN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Molecule type: protein
A;Residues: 576-590 <FAY>
A; Residues: 23-56 < SH3 >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Accession: A36013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Accession: A60913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Accession: A44178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Accession: A23464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Accession: S23678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Accession: S07363
                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Accession: A90504
                                                                          C. Species: However presures or mutan of Species: However, the species of Spe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 polymorphisms, repeated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: EMBL:M17588; NID:g799330; PIDN:AAA65940.1; PID:g340316
A;Accession: S23645
A;Molecule t;ype: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A.Reference number: A91056
A.Accession: A25366
A.Accession: A25366
A.Molecule type: mRNA
A.Molecule type: mRNA
A.Residues: 1021-1030 vVE2>
A.Note: this is a revision to the sequence from reference A91044
R.Shelton-Inloes, B.B.; Broze Jr., G.J.; Miletich, J.P.; Sadler, J.E.
Blochem. Blophys. Res. Commun. 144, 657-665, 1987
A.Title: Evolution of human von Willebrand factor: cDNA sequence polyn
                                                                   factor precursor - human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A,Accession: S23618
A,Molecule type: mRNA
A,Residues: 1-120 <SH2>
                                                               Willebrand
RESULT 12
```

```
c]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ď,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οĘ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A,Title: Propolypeptide of von Willebrand factor circulates in blood and is identica
A,Reference number: A60913; MUID:86208144; PMID:3486471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A.G.
Risadler, J.E.; Shelton-Inloes, B.B.; Sorace, J.M.; Harlan, J.M.; Titani, K.; Davie, Proc. Natl. Acad. Sci. U.S.A. 82, 6394-6398, 1,1985
A;Title: Cloning and characterization of two cDNAs coding for human von Willebrand f A;Reference number: A94060; WUID:86016708; PMID:2864688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: mRNA
A; Residues: 2621-2813 (GIN>
A; Cross-references: EMBL: 803028; NID: 9340308; PIDN: AAA61293.1; PID: 9340309
B; Verweij, C.L.; de Vries, C.J.M.; Distel, B.; van Zonneveld, A.J.; van Kessel, A.G.
Nucleic Acids Res. 13, 4659-4717, 1985
A; Title: Construction of cDNA coding for human von Willebrand factor using antibody
A; Reference number: S07363; MUID: 85269603; PMID: 3875078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A,Molecule type: mRNA
A,Residues: 2731-2813 <VE3>
A,Residues: 2731-2813 <VE3>
A)Cross-references: EMBL:XO2672; NID:g37939; PIDN:CAA26503.1; PID:g37940
R)Cross-references: EMBL:XO2672; NID:g37939; PIDN:CAA26503.1; PID:g37940
R)Lynch, D.C.; Zimmerman, T.S.; Collins, C.J.; Brown, M.; Morin, M.J.; Ling, E.H.; Cell 41, 49-56, 1985
A;Title: Molecular cloning of cDNA for human von Willebrand factor: authentication A;Reference number: S23678; MUID:85201687; PMID:3873280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Fay, P.J.; Kawai, Y.; Wagner, D.D.; Ginsburg, D.; Bonthron, D.; Ohlsson-Wilhelm, Science 232, 995-998, 1986
                                                                                                                                                                                                               A,Molecule type: mRNA
A,Residues: 'WA',739,'C',744-769,'H',771-788,'A',790-803,'S',805-873;1289-1471,'D'
A,Note: the authors translated the codon TCG for residue 2168 as Cys
R;Shelton-Inloes, B.B.; Titani, K.; Sadler, J.E.
Biochemistry 25, 3164-3171, 1986
A;Title: cDNA sequences for human von Willebrand factor reveal five types of repeat
A;Reference number: A90504; MUID:86269894; PMID:3488076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: EMBL:K03028
R;Titani, K.; Kumar, S.; Takio, K.; Ericsson, L.H.; Wade, R.D.; Ashida, K.; Walsh,
Biochemistry 25, 3171-3184, 1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: protein
A; Residues: 764-773;2803-2813 <CHO>
B; Dent, J.A.; Berkowitz, S.D.; Ware, J.; Kasper, C.K.; Ruggeri, Z.M.
Proc. Natl. Acad. Sci. U.S.A. 87, 6306-6310, 1990
A; Title: Identification of a cleavage site directing the immunochemical detection
A; Reference number: A36013; MUID: 90349604; PMID: 2385594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Molecule type: mRNA
A;Residuce: 781-788, A, 790-1424 <SHE>
A;Note: 852-Gln, 857-Asp, and 1381-Thr were also found
R;Ginsburg, D.; Handin, R.I.; Bonthron, D.T.; Donlon, T.A.; Bruns, G.A.P.; Latt, S
Science 228, 1401-1406, 1985
A;Title: Human von Milebrand factor (vWF): isolation of complementary DNA (cDNA)
A;Reference number: A44178; MUID:85244588; PMID:3874428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of identical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A,Molecule type: protein
A,Molecule type: protein
A,Residues: 764-788, A.,790-1471, D',1473-2813 <TIT>
A,Roce: 789-Thr was also found
R,Chopek, M.W.; Girma, J.P.; Fujikawa, K.; Davie, E.W.; Titani, K.
Biochmistry 25, 3146-3155, 1986
A,Fitle: Human von Willebrand factor: a multivalent protein composed
A,Reference number: A23464; WUID:86269892; PMID:3015199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Title: Amino acid sequences of human von Willebrand fa
A;Reference number: A90505; MUID:86269895; PMID:3524673
A;Accession: A90505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A,Gene: GDB:VWF
A,Cross-references: GDB:119125; OMIM:193400
```

ហ

ōţ

effector genes

2;

3,

Indels

Length 1036;

64

```
Annormous, The C. elegans Sequencing Consortium.
Science 282, 2012-2013, 1998
A;Title: Genome sequence of the nematode C. elegans: a platform for investigating bic A;Reference number: A75000; MUID: 99069613; PMID: 9851916
A;Note: see websites genome.wustl.edu/gsc/C_elegans/ and www_sanger.ac.uk/Projects/C_A;Accession: C89046
A;Accession: C89046
A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GB:chr_V; PIDN:AAB09171.1; PID:g1572829; GSPDB:GN00023; CESP:C106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Cross-references: EMBL: AF076513; NID: 94164530; PID: 94164531; PIDN: AAD05493.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  555 GDHHCPEGMTFNECGSGCGPGSCDNLVPRDICPLFCFVGCFCPEGLVKDQDGGDRCIPVD 614
C;Species: Strongylocentrotus purpuratus (purple urchin)
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 11-May-2000
C;Accesion: T17405
R;Pancer, Z.; Rast, J.P.; Davidson, E.H.
Immunogenetics 49, 773-786, 1999
A;Title: Origins of immunity: transcription factors and homologs of effector A;Reference number: Z18253; MUID:99328904; PMID:10398804
A;Reference number: Z18253; MUID:99328904; PMID:10398804
A;Accession: T17405
A;Status: preliminary; translated from GB/BMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein C10G8.4 [imported] - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 10-May-2001 #sequence_revision 10-May-2001 #text_change 10-May-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8 GRGKCPSNEIFSRCDGRC-ORFCPNVVPKPLCIKICAPGCVCRLGYLRNKK--KVCVPRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11 KCPSNEIFSRCDGRCORFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 24.7%; Score 96.5; DB 2;
Best Local Similarity 30.6%; Pred. No. 0.05;
Matches 19; Conservative 10; Mismatches 30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1-1036 <PAN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 19; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: DNA
A; Residues: 1-98 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: mRNA
A; Residues: 1-1036 <P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Accession: C89046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       : 21 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               615 QC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ž.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Map position:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Job time
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Search
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                  A, Map Docition: 12p1.1-12p1.2;

A, Map Docition: 12p1.1-12p1.2;

A, Matherens: 19/1; 74/1; 108/2; 178/1; 218/3; 229/1; 333/1; 370/2; 386/1; 431/3; 478/1; 51

S/1; 1724/1; 1771/1; 1819/1; 1874/1; 108/2; 138/8/1; 2021/3; 2086/1; 2200/1; 2266/3; 236

C, Superfamily: von Willebrand factor: von Willebrand factor: type A repeat homology; von
C, Keywords: blood oragulation; cell binding; connective tissue; disulfide bond; duplicat
F; 12-75/Domain: signal sequence #status predicted <SIG>
F; 12-75/Domain: type D repeat 1 <DDD>
F; 38-745/Domain: type D repeat 1 <DDD>
F; 38-745/Domain: type D repeat 2 <DDD>
F; 38-745/Domain: type D repeat 2 <DDD>
F; 38-745/Domain: type D repeat 2 <DDD>
F; 88-83, 240-62/Region: duplication
F; 88-83, 240-62/Region: duplication
F; 88-213/8-2203/Region: duplication
F; 88-2-1130, 1934-2203/Region: duplication
F; 88-2-1130, 1934-2203/Region: duplication
F; 88-1130, 1934-2203/Region: duplication
F; 88-1143/Domain: type B repeat 2 <NB3>
F; 28-1-28-1/Momain: type B repeat 2 <NB3>
F; 28-1-28-1/Momain: type B repeat 2 <NB3>
F; 28-1-28-1/Momain: type B repeat 3 <NB3>
F; 28-1-28-1/Mom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         scavenger receptor cysteine-rich protein precursor - sea urchin (Strongylocentrotus purd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alpha tectorin - chicken

(Species: Gallus gallus (chicken)

(Species: Gallus gallus (chicken)

(Species: 02-Sep-2000 #sequence_revision 02-Sep-2000 #text_change 02-Sep-2000

(Spacession: T30243

R;Coutinho, P.; Goodyear, R.G.; Legan, P.K.; Richardson, G.P.

R;Coutinho, P.; Goodyear, R.G.; Legan, P.K.; Richardson, G.P.

R;Coutinho, P.; Goodyear, R.G.; Legan, P.K.; Richardson, G.P.

R;Cottinho, P.; R;Cottinho, P.K.; Richardson, G.P.

R;Cottinho, P.; Richardson, G.P.

R;Cottinho, P.; Richardson, R.G.; Richardson, G.P.

R;Cottinho, P.; Richardson, G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Molecule type: mRNA
A;Residues: 1-2120 <COU>
A;Cross-references: EMBL:AJ012287; NID:e1361091; PID:e1361092; PIDN:CAA09979.1
A;Note: non-collagenous protein only expressed in the inner ear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CPPNSHYESCVSLCQPRCAAIRLKSDCGHYCVEGCQCDPGYVLNGKSCILPQN-CG 1399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ---KCPSNEIFSRCDGRCQRFCPNV-VPKPLCIKICAPGCVCRLGYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 2; Length 2120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25.1%; Score 98; DB 1; Length 2813; 26.0%; Pred. No. 0.074; tive 13; Mismatches 27; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24.9%; Score 97.5; DB 2; Length 2 larity 35.7%; Pred. No. 0.067; Conservative 6; Mismatches 29; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 26.0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RNKKKVCVPRSKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GRG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 14
T17405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        T30243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             op
O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
```

```
39 RCPSNEEFRSCGTACEPTCQNPNPQVCTLQCILMVCQCSQGFVRGPNG-CVPPQDC 93
                                                                                                                       completed: November 17, 2003, 08:09:51
```

1;

Gaps

Indels

Length 98;

Score 94.5; DB 2; Pred. No. 0.014;

7; Mismatches

Sequence Sequence Sequence

Sequence Sequence Sequence

Sequence (Sequence 1 Sequence 2

Sequence 18, Appl Sequence 24, Appl Sequence 14, Appl Sequence 10, Appl Sequence 11, Appl Sequence 12, Appl Sequence 12, Appl Sequence 14, Appl Sequence 1279, Appl Sequence 6377, Appl Sequence 6377, Appl Sequence 61, Appl

OM protein

Run on:

Sequence:

```
Sequence 1, Application US/10174151
Publication No. US20030165514A1
GENERAL INFORMATION:
APPLICANT: Spertini, Francois /
TITLE OF INVENTION: NOVEL BEE VENOM POLYPEPTIDES AND METHODS OF USE THEREOF
FILE REFERENCE: 18519-001
CURRENT APPLICATION NUMBER: US/10/174,151
CURRENT APPLICATION NUMBER: US/09/506,978
PRIOR FILING DATE: 2002-06-18
PRIOR FILING DATE: 2000-02-18
NUMBER OF SEQ ID NOS: 5
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 1
LENGTH: 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC
US-09-498-272-49

US-09-498-272-62

US-10-231-509-5

US-10-23-386-32016

US-09-488-90-2

US-09-488-272-57

US-09-498-272-57

US-09-498-272-25

US-10-189-971-6

5 US-10-189-971-16

5 US-10-189-971-14

5 US-09-925-727-16

1 US-09-925-301-1279

US-09-925-301-1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 100.0%; Score 391; DB 12;
Best Local Similarity 100.0%; Pred. No. 2.3e-34;
Matches 67; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 2
US-10-174-151-2
**Sequence 2, Application US/10174151
**Publication No. US20030165514A1
**GENERAL INFORMATION:
      ; ORGANISM: Apis mellifera
US-10-174-151-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 VPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-174-151-1
      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1, Appli
Sequence 3, Appli
Sequence 4, Appli
Sequence 40, Appl
Sequence 1116, Ap
Sequence 59, Appl
Sequence 59, Appl
Sequence 128, App
Sequence 4, Appli
Sequence 4, Appli
Sequence 79, Appli
Sequence 79, Appli
Sequence 79, Appli
Sequence 4, Appli
Sequence 25, Appli
Sequence 25, Appli
                                                                                                                          (without alignments)
421.775 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Description
                                                                                                                                                                                                                                                                                                                                                                                                                                 Published Applications AA:*

| cgn2_6/ptodata/2/pubpaa/USO7_PUBCOMB.pep:*
2: /cgn2_6/ptodata/2/pubpaa/USO7_PUBCOMB.pep:*
3: /cgn2_6/ptodata/2/pubpaa/USO6_NEW PUB.pep:*
4: /cgn2_6/ptodata/2/pubpaa/USO6_PUBCOMB.pep:*
5: /cgn2_6/ptodata/2/pubpaa/USO7_NEW PUB.pep:*
6: /cgn2_6/ptodata/2/pubpaa/USO7_NEW PUB.pep:*
7: /cgn2_6/ptodata/2/pubpaa/USO7_NEW PUB.pep:*
8: /cgn2_6/ptodata/2/pubpaa/USO8_NEW PUB.pep:*
9: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
11: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
12: /cgn2_6/ptodata/2/pubpaa/USO9_PUBCOMB.pep:*
11: /cgn2_6/ptodata/2/pubpaa/USO9_PUBCOMB.pep:*
12: /cgn2_6/ptodata/2/pubpaa/USO9_PUBCOMB.pep:*
13: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
14: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
15: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
16: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
17: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
18: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
18: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
18: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
                                                                                                                                                                  US-09-506-978-1
391
1 GGFGGLGGRGKCPSNEIFSR......CRLGYLRNKKKVCVPRSKCG
                                                                                                          November 17, 2003, 08:09:22 ; Search time 29 Seconds
                     GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 US-10-174-151-1

2 US-10-174-151-2

2 US-10-174-151-3

2 US-10-174-151-3

2 US-10-174-151-4

2 US-10-174-151-4

4 US-10-025-310-1116

4 US-09-222-217-1116

4 US-09-498-272-59

1 US-09-498-272-128

2 US-10-029-386-31899

2 US-10-029-386-31899

2 US-10-029-386-31899

2 US-10-029-386-31899

3 US-10-020-141-74-4

1 US-09-381-261A-1

2 US-10-020-141-4

1 US-09-498-272-25
                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                         666188 segs, 182559486 residues
                                                                                                                                                                                                                                                                                                                                                                                                            Listing first 45 summaries
                                                                              - protein search, using sw model
                                                                                                                                                                                                                              BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0% Maximum Match 100%
                                                                                                                                                                                                                                                                                                                                    seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              67
69
73
73
74
74
84
84
76
76
76
76
78
78
78
78
78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1000.0
1000.0
1000.0
24.7.2
24.7.2
25.7.2
25.7.2
25.7.2
25.7.2
25.7.3
25.1
25.1
25.1
25.1
25.1
25.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              391
391
391
391
106.5
106.5
100
100.9
98.5
98.9
98.9
                                                                                                                                                                                    Perfect score:
                                                                                                                                                                                                                              Scoring table:
```

Minimum DB Maximum DB

Database

Searched:

ö 9 9

ô

Length 67;

Result

```
RESULT 5
US-10-087-887-40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                     FEATURE:
                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 3, Application US/10174151
Publication No. US20030165514A1
GENERAL INFORMATION:
APPLICANT: Spertini, Francois
TITLE OF INVENTION: NOVEL BEE VENOM POLYPEPTIDES AND METHODS OF USE THEREOF
FILE REFRENCE: 18519-001
CURRENT APPLICATION NUMBER: US/10/174,151
CURRENT FILING DATE: 2002-06-18
PRIOR PAPLICATION UNMBER: US/09/506,978
PRIOR PELING DATE: 2000-02-18
NUMBER OF SEQ ID NOS: 5
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO S: 5
LENGTH: 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Sperini, Francois
TITLE.OF INVENTION: NOVEL BEE VENOM POLYPEPTIDES AND METHODS OF USE THEREOF
FILE REPERENCE: 18219-001
CURRENT APPLICATION NUMBER: US/10/174,151
CURRENT FILING DATE: 2002-06-18
APPLICANT: Spertini, Francois
TITLE OF INVENTION: NOVEL BEB VENOM POLYPEPTIDES AND METHODS OF USE THEREOF
FILE REPERENCE: 18519-001
CURRENT APPLICATION NUMBER: US/10/174,151
CURRENT FILING DATE: 2002-06-18
PRIOR APPLICATION NUMBER: US/09/506,978
PRIOR FILING DATE: 2000-02-18
NUMBER OF SEQ ID NOS: 5-02-18
SOFTWARE: Parentin Ver. 2.0
LENGTH: 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                 0; Gaps
                                                                                                                                                                                                                                                                     FEATURE:
; OTHER INFORMATION: Where XX at position 68 and 69 is either PL or LP.
US-10-174-151-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 71;
                                                                                                                                                                                                                                                                                                                                                        Length 69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                    ; Score 391; DB 12;
; Pred. No. 2.3e-34;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%; Score 391; DB 12;
100.0%; Pred. No. 2.4e-34;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; Sequence 4, Application US/10174151; Publication No. US20030165514A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                    ch
1 Similarity 100.0%;
67; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; TYPE: PRT
; ORGANISM: Apis mellifera
US-10-174-151-3
                                                                                                                                                                                                                             TYPE: PRT
ORGANISM: Apis mellifera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 VPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 VPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           65 VPRSKCG 71
                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 67; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-174-151-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 3
US-10-174-151-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             du
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

```
3;
                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPRPLCIKICAPGCVCRLGYLRNKKKVC 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                             ; OTHER INFORMATION: Where XX at position 72 and 73 is either PL or LP. US-10-174-151-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    j OTHER INFORMATION: Description of Artifical Sequence: Domain
US-10-087-887-40
                                                                                                                                                                                                                                                                                                                                                Query Match
100.0%; Score 391; DB 12; Length 73;
Best Local Similarity 100.0%; Pred. No. 2.5e-34;
Matches 67; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Padigaru, Muralidhara
TITLE OF INVENTION: PROTEINS AND NUCLEIC ACIDS ENCODING SAME
FILE REFERENCE: 21402-285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 30.4%; Score 119; DB 12; Best Local Similarity 37.3%; Pred. No. 1.4e-05; Matches 25; Conservative 7; Mismatches 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT FILING DATE: 2002-03-01
PRIOR PILING DATE: 2002-03-01
PRIOR FILING DATE: 2002-03-01
PRIOR FILING DATE: 2001-03-02
PRIOR FILING DATE: 2001-03-02
PRIOR FILING DATE: 2001-03-29
PRIOR FILING DATE: 2001-03-21
PRIOR PILING DATE: 2001-03-21
PRIOR PILING DATE: 2001-03-21
PRIOR PILING DATE: 2001-03-21
PRIOR FILING DATE: 2001-03-21
PRIOR FILING DATE: 2001-04-03
PRIOR FILING DATE: 2001-04-03
PRIOR FILING DATE: 2001-04-03
PRIOR PILING DATE: 2001-04-03
PRIOR PILING DATE: 2001-04-10
PRIOR PILING DATE: 2001-04-10
PRIOR PILING DATE: 2001-04-09
PRIOR PILING DATE: 2001-04-09
PRIOR PILING DATE: 2001-04-09
PRIOR PILING DATE: 2001-04-09
PRIOR PILING DATE: 2001-04-10
NUMBER OF SEQ ID NOS: 104
SOFTWARE: CURSCHIST VERSION 0.1
LENGTH: 67
PRIOR APPLICATION NUMBER: US/09/506,978
PRIOR FILING DATE: 2000-02-18
NUMBER OF SEQ ID NOS: 5
SCFTWARE: PatentIn Ver: 2.0
SEQ ID NO 4
LENGTH: 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 40, Application US/10087887
Publication No. US20030198957A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Shimkets, Richard A.
Leach, Martin D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tomlinson, James E.
Topper, James N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Zerhusen, Bryan D.
Komuves, Laszlo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Kekuda, Ramesh
APPLICANT: Conley, Pamela B.
PPLLICANT: Yang, Ruey-Bing
APPLICANT: Hart, Matthew
                                                                                                                                                                           TYPE: PRT
ORGANISM: Apis mellifera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 VPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  65 VPRSKCG 71
```

ä

1; Gaps

Indels

```
1531 ECPPNSHYELCADTCSLGCSALSAPPOCQDGCAEGCQCDSGFLYN-GQACVPIQQCG 1586
                                                                                                                                                                                                                                                    11 KCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKCG 67
                                                                                                                                                                        DB 14; Length 5405;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ESTGUM, PETER W.
TITLE OF INVENTION: NEMATODE-EXTRACTED SERINE PROTEASE
TITLE OF INVENTION: INHIBITORS AND ANTICOAGULANT
                                                                                                                                                                                                             29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Stanssens, Patrick Eric Hugo
Messens, Joris Hilda Lieven
Lauwereys, Marc Josef
Laroche, Yves Rene
Jespers, Laurent Srephane
Gansemans, Yannick Georges Jozef
Moyle, Matthew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: PCT/US95/13231
FILING DATE: October 17, 1995
APPLICATION NUMBER: 08/486,399
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/486,397
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/465,380
                                                                                                                                                                      Score 106.5; DB Pred. No. 0.019;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM Compatible
OPERATING SYSTEM: IBM P.C. DOS 5.C
SOFTWARE: Word Perfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/498,272
FILING DATE: 04-Feb-2000
PRIOR APPLICATION DATA:
                                                                                                                                                                                                             6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER: 216/270 TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/326,110
                NUMBER OF SEQ ID NOS: 1129
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 1116
LENGTH: 5405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 633 West Fifth Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  October 18, 1994
                                                                                                                                                                                                                                                                                                                                                                                      Sequence 59, Application US/09498272
Publication No. US20030113890A1
GENERAL INFORMATION:
APPLICANT: Vlasuk, George Phillip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM: MEDIUM TYPE: 3.5" Diskette,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: BIGGS, SUZANNE L.
REGISTRATION NUMBER: 30,158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: (213) 955-0440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: Lyon & Lyon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION
  2001-12-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            storage
                                                                                                                                                                      27.2%;
36.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Suite 4700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STATE: California COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CITY: Los Angeles
                                                                                                                                                        Query Match
Best Local Similarity 36.0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'ILING DATE:
                                                                                                             ) ORGANISM: Homo sapiens
US-10-025-380-1116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZIP: 90071
CURRENT FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                     US-09-498-272-59
                                                                                         TYPE: PRT
                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ä
                        1 CPANEQYTECGPSCEPSCSNPDGPLETTPPCEGTSPKVPSTCKEGCVCQPGYVRNNDGDK 60
CPSNEIFSRCDGRCQRFCPN-----VVP----KPLCIKICAPGCVCRLGYLRNKK-KV 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11 KCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 5405;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Carter, Darrick
TITLE OF INVENTION: COMPOUNDS FOR IMMUNOTHERAPY AND DIAGNOSIS
TITLE OF INVENTION: OF COLON CANCER AND METHODS FOR THEIR USE
FILE REFERENCE: 210121.471C14
CURRENT APPLICATION NUMBER: US/10/025,380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Clapper, Jonathan D. IIILE OF INVENTION: COMPOUNDS FOR IMMUNOTHERAPY AND DIAGNOSIS TITLE OF INVENTION: OF COLON CANCER AND METHODS FOR THEIR USE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score Loud. Pred. No. 0.019;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27,2%; Score 106.5; 36.8%; Pred. No. 0.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILE REFERENCE: 210121.471C13
CURRENT APPLICATION NUMBER: US/09/922,217
CURRENT FILING DATE: 2001-08-03
NUMBER OF SEQ ID NOS: 1124
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 1116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1116, Application US/10025380 Publication No. US20020182191A1 GENERAL INFORMATION: APPLICANT: Xu, Jiangchun
                                                                                                                                                                                                             Sequence 1116, Application US/09922217
Patent No. US20020076414A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Lodes, Michael J.
Secrist, Heather
Benson, Darin R.
Meagher, Madeleine Joy
Stolk, John A.
Wang, Tongtong
                                                                                                                                                                                                                                                                                        Lodes, Michael J.
Secrist, Heather
Benson, Darin R.
Magher, Madeleine Joy
Stolk, John A.
Wang, Tongtong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Clapper, Jonathan D. Skeiky, Yasir A. W. Fanger, Gary R. Vedvick Thomas S.
                                                                                                                                                                                                                                                                                                                                                                                                            Jiang, Yuqiu
Smith, Carole Lynn
King, Gordon E.
Wang, Aijun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Jiang, Yuqiu
Smith, Carole L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             King, Gordon E.
Wang, Aijun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21; Conservative
                                                                                                                                                                                                                                                 GENERAL INFORMATION:
APPLICANT: Xu, Jiangchun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
ORGANISM: Homo sapiens
                                                                           CVPRSKC 66
                                                                                                   |||||:|
61 CVPRSEC 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -10-025-380-1116
                                                                                                                                                                                             US-09-922-217-1116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-922-217-1116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
  12
                                                                           09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                               g
  à
                                    g
                                                                           ò
```

```
APPLICANT: Wolfner, Mariana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 31899
                                                                                                                                                                                                                                                                                                                                                          US-09-498-272-128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-114-774-4
                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠ
                                                                                                                                                                                                                                                                                             3,
                                                                                                                                                                                                                                                                                                                                       -----PNVVPKPLCIKICAPGCVCRLGYLRNKK 57
                                                                                                                                                                                                                                                                                                                                                               5 QCGENEKYDSCGSKECDKKCKYDGVEEEDDEEPNV---PCLVRVCHQDCVCEBGFYRNKD 61
                                                                                                                                                                                                                                                    25.6%; Score 100; DB 11; Length 84; 30.4%; Pred. No. 0.0018; Live 8; Mismatches 24; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bergum, Peter W. TITLE OF INVENTION: NEMATODE-EXTRACTED SERINE PROTEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INHIBITORS AND ANTICOAGULANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Lauwereys, Marc Josef
Laroche, Yves Rene
Laspers, Laurent Stephane
Gansemans, Yannick Georges Jozef
Moyle, Matthew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM Compatible
OPERATING SYSTEM: IBM P.C. DOS 5.0
SOFTWARE: Word Perfect 5.1
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: PCT/US95/13231
FILING DATE: October 17, 1995
PPLICATION NUMBER: 08/486,399
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/486,397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 128, Application US/09498272
Publication No. US20030113890A1
GENERAL INFORMATION:
APPLICANT: Vlasuk, George Phillip
Stanssens, Patrick Eric Hugo
Messens, Joris Hilda Lieven
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/09/498,272 FILING DATE: 04-Feb-2000 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/465,380
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/326,110
FILING DATE: October 18, 1994
                                                                                                                                                                 ORGANISM: Ancyclostoma caninum
SEQUENCE DESCRIPTION: SEQ ID NO: 59:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
ADDRESSE: Lyon & Lyon
STREET: 633 West Fifth Street
SIREET: 6400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROTEIN
                                                                                                                                                                                                                                                                                                                                       11 KCPSNEIFSRCDGR-CQRFC--
                                                               LENGIH: 84 amino acids
TELEX: 67-3510
INFORMATION FOR SEQ ID NO: 59:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SECUENCES: 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ZIP: 90071
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STATE: California COUNTRY: U.S.A.
                                                                              TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: peptide
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: Los Angeles
                                                                                                                                                                                                                                                                       Best Local Similarity 30.4 Matches 21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                       58 KVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                               62 DKCVSAEDC 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 9
US-09-498-272-128
                                                                                                                                                                                                          US-09-498-272-59
                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

```
Sequence 31899, Application US/10029386
Publication No. US20030194704A1
GENERAL INFORMATION:
APPLICANT: Penn, Sharron G.
APPLICANT: Panch, David R.
APPLICANT: HURAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USFUL F.
TITLE OF INVENTION: EXPRESSION ANALYSIS TWO
FILE REFERENCE: AEOMICA-X-2
CURRENT APPLICATION NUMBER: US/10/029,386
CURRENT FILING DATE: 2001-12-20
NUMBER OF SEQ ID NOS: 34288
SOFTHARE: AHDOMAX Sequence Listing Engine vers. 1.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12 QCGENEXYDSCGSKECDKKCKYDGVEEEDDEEPNV---PCLVRVCHQDCVCEEGFYRNKD 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11 KCPSNEIFSRCDGR-CQRFC------PNVVPKPLCIKICAPGCVCRLGYLRNKK 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11 KCPSNEIFSRCDGRCQRFCPNVVPKPL-CIKICAPGCVCRLGYLRNKKKVCVPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12 ECPONSHYELCADTCSLGC-SALSAPLOCPDGCAEGCQCDSGFLYN-GQACVPIQQCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Э
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 91;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 25.2%; Score 98.5; DB 12; Length 'Best Local Similarity 37.9%; Pred. No. 0.0023; Matches 22; Conservative 7; Mismatches 26; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OTHER INFORMATION: MAP TO AC011536.5

OTHER INFORMATION: EXPRESSED IN PLACENTA, SIGNAL = 1
OTHER INFORMATION: EXPRESSED IN ADULT LIVER, SIGNAL = 0.5
OTHER INFORMATION: SWISSPROT HIT: 088799, EVALUE 2.00e-15
US-10-029-386-31899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 100; DB 11;
Pred. No. 0.0019;
                       NAME: BIGGS, SUZANNE L.
REGISTRATION NUMBER: 30,158
REFERENCE/DOCKET NUMBER: 216/270
TELECOMMUNICATION INFORMATION:
TELEPHONE: (213) 489-1600
TELEFAX: (213) 955-0440
TELEX: 67-3510
INFORMATION FOR SEQ ID NO: 128:
SEQUENCE CHARACTER.ESTICS:
LENGTH: 91 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE DESCRIPTION: SEQ ID NO: 128:
                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Ancyclostoma caninum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 4, Application US/10114774; Publication No. US20030166533A1; GENERAL INFORMATION:
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25.6%;
illarity 30.4%;
Conservative
                                                                                                                                                                                                                                                                                                       TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: peptide
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             69 DKCVSAEDC 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity
Matches 21; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   58 KVCVPRSKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-029-386-31899
```

```
25.1%; Score 98; DB 15; L. 26.0%; Pred. No. 0.081; tive 13; Mismatches 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 15
US-09-498-272-25
; Sequence 25, Application US/09498272
; Publication No. US2003011389081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 26.0%,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ::: |||:::|
695 MDERGDCVPKAQC 707
                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 26.0%
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              695 MDERGDCVPKAQC 707
                                                          Susan R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        54 RNKKKVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           54 RNKKKVCVPRSKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 GRG----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO 4
LENGTH: 2813
                                                                                                                                                                                                                                                                                                                                                                                                             US-10-021-660-79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-020-141-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
APPLICANT: Lung, Oliver
APPLICANT: Tram, Khanh-Uyen
TITLE OF INVENTION: GENES FOR MALE ACCESSORY GLAND PROTEINS IN DROSOPHILA
TITLE OF INVENTION: MELANGGASTER
FILE REFERENCE: 19603/1791
CURRENT APPLICATION NUMBER: US/10/114,774
CURRENT PILING DATE: 2002-04-02
PRIOR APPLICATION NUMBER: 09/219,983
PRIOR APPLICATION NUMBER: 09/219,983
PRIOR PILING DATE: 1988-12-23
NUMBER OF SEQ ID NOS: 35
SOFTWARE: PALENTIN Ver. 2.1
SEQ ID NO 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 GRG-------KCPSNEIFSRCDGRCQRFCPNV-VPKPLCIKICAPGCVCRLGYL 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26 GWQGPKVDCTANGTQTECPVACPETCEYSGNGP-CVKMCGAPCVCKPGYVINERIPACVL 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 GGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKK-KVCVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1, Application US/09381261A

Patent No. US20020123457A1

GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Loscallzo, Joseph

APPLICANT: Loscallzo, Joseph

TITLE OF INVENTION: No. US20020123457A1e1 Anti-Platelet Agent
FILE REFERENCE: 19258.327

CURRENT APPLICATION NUMBER: US/09/381,261A

CURRENT FILING DATE: 1999-12-07

PRIOR FILING DATE: 1999-12-07

PRIOR APPLICATION NUMBER: DC7/US98/06092

PRIOR FILING DATE: 1997-03-27

NUMBER OF SEQ ID NOS: 3

SOFTWARE: PatentIn version 3.1

LENGTH: 2813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25.1%; Score 98; DB 10; Length 2813; 26.0%; Pred. No. 0.081; ive 13; Mismatches 27; Indels 14
                                                                                                                                                                                                                                                                                                                                                                              25.1%; Score 98; DB 12; Length 115; Line 34.4%; Pred. No. 0.0039; Conservative 9; Mismatches 31; ThAsh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 79, Application US/10021660; Publication No. US20030152926A1; GENERAL INFORMATION: APPLICANT: Murray, Richard; APPLICANT: Glynne, Richard
                                                                                                                                                                                                                                                                                                                 TYPE: PRT
ORGANISM: Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ::: |||:::|
695 MDERGDCVPKAQC 707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 54 RNKKKVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
Matches 22; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63 RSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RSDC 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 13
US-10-021-660-79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-381-261A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-381-261A-1
                                                                                                                                                                                                                                                                         Q ID NO 4
LENGTH: 115
                                                                                                                                                                                                                                                                                                                                                      US-10-114-774-4
                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
```

```
APPLICANT: EOS Biocechnology, Inc.
TITLE OF INVENTION: Occupositions and Methods of Diagnosis of Angiogenesis,
TITLE OF INVENTION: Occupositions and Methods of Screening for Angiogenesis
TITLE OF INVENTION: Modulators
FILE REFERENCE: 018501-000710US
FILE REFERENCE: 018501-000710US
CURRENT PAPPLICATION NUMBER: US/10/021,660
CURRENT FILING DATE: 2001-02-14
PRIOR APPLICATION NUMBER: US/09/784,356
PRIOR APPLICATION NUMBER: US/09/784,356
PRIOR APPLICATION NUMBER: US/09/637,977
PRIOR FILING DATE: 2000-08-11
NUMBER OF SEQ ID NOS: 135
CRIMER PRIOR SEXESEQ for Windows Version 3.0
SEQ ID NO 79
LENGTH: 2813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 GRG------KCPSNEIFSRCDGRCQRFCPNV-VPKPLCIKICAPGCVCRLGYL 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -----KCPSNEIFSRCDGRCQRFCPNV-VPKPLCIKICAPGCVCRLGYL 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Sequence 4, Application US/10020141
| Publication No. US20030092013A1
| Sequence 4, Application No. US20030092013A1
| GENERAL INFORMATION:
| APPLICANT McCarthy, Jeanette
| APPLICANT Ableson, Allen
| TITLE OF INVENTION: DIAGNOSIS AND TREATMENT OF VASCULAR DISEASE
| FILE REFERENCE: MMI-02
| CURRENT APPLICATION NUMBER: US/10/020,141
| CURRENT FILING DATE: 2001-12-14
| PRIOR FILING DATE: 2001-12-14
| PRIOR FILING DATE: 2001-10-05
| PRIOR FILING DATE: 2001-10-05
| NUMBER OF SEQ ID NOS: 21
| SOFTWARE: FASISEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25.1%; Score 98; DB 12; Length 2813; 26.0%; Pred. No. 0.081; ive 13; Mismatches 27; Indels 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 15; Length 2813;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
```

```
GENERAL IRPORMATION:

APPLICANT, Vasuk, George Phillip
Standard, Para Read
General, Part Read
General, Marther
General, Marther
Ferent, Mart Read
Freez, Laurett Stephen
Friend Freez, Laurett Stephen
Friend Freez, Laurett Stephen
Friend Freez, Laurett Stephen
Friend Freez, 13 Wear Pitch Street
COUNTRE READALS FORM:
GENERAL FORM: Coultering Marther Street
COUNTRE Freez, 13 Wear Fitch Street
COUNTRE FRANGE FORM:
GENERAL FORM: Coultering Marther Street
COUNTRE FRANGE FORM: Marther Street
FILMS DATE: June 5, 1995
FILMS DATE:
```

```
61 VESDDC 66
```

셤

Search completed: November 17, 2003, 08:14:48 Job time: 30 secs

```
November 17, 2003, 08:02:36; Search time 40 Seconds (without alignments) 265.867 Million cell updates/sec
                                                                                                                                                                                                                                                                                                    US-09-506-978-1
391
1 GGFGGLGGRGKCPSNEIFSR......CRLGYLRNKKKVCVPRSKCG
GenCore version 5.1.6
(c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                    1107863 seqs, 158726573 residues
                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                          using sw model
                                                                                                                                                   BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                              Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                           OM protein - protein search,
          Copyright
                                                                                                                      score:
                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                          Database :
                                                                                                                                Sequence:
                                                                                                                                                                                     Searched:
                                                                                                         Title:
Perfect
                                                               Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Description	Bee venom protein	Bee venom protein	Bee venom protein	Bee venom protein	Amino acid sequenc	Drosophila melanog	Pig p105 zona pell	IgG-Fc binding pro	Novel human diagno
SUMMARIES		ABB08331	ABB08332	ABB08333	AAY69209	ABB71529	AAW67738	AAW14748	ABG22214
DB	23	23	23	23	21	22	20	16	22
% Query ce Match Length DB I	19	69	71	73	92	3843	2476	2594	2957
% Query Match	100.0	100.0	100.0	100.0	100.0	27.6	27.5	27.2	27.2
Score	391	391	391	391	391	108	107.5	106.5	106.5
Result No.	1	7	ო	4	Ŋ	9	7	α	σı

IgG-Fc binding pro	color	humar	Novel human diagno	e ner	틍	AcaNAPc2. Ancylos	w	e	A. caninum nematod	Novel human diagno	Drosophila Acp62F	Drosophila melanog	Human von Willebra	Sequence of von Wi	Sequence of human	n Will	Human VWF protein.	Angiogenesis-assoc	Novel human secret	Human gene 8 encod	H	Human gene 8 encod	œ	Human gene 8 encod	Drosophila melanog	Drosophila melanog	Nematode extracted	Mature nematode ex		A. ceylanicum nema	Mature nematode ex	AceNAP4. Ancylost	Nematode extracted	Ę	la mel	
AAW1474		ABG2221	ABG2221	AAY3043	AAB1531	AAR9170	AAY3039	AAY3045	AAB1534		AAY2217		AAY1646												ABB63313									: ABB64069	ABB6138	
405	5405 24	337												813	813		813	813	814																	
۲.	27.2	ú	'n	'n	'n	'n	ı.	'n	'n	'n	'n	'n.	'n.	'n	'n.	'n.	'n.	'n.	'n.	4.	4.	4.	4.	4	23.7	۳,	w.	θ,	ë.	e,	m,	ω,	w.	ď.	ď.	
106.5	106.5	101.5	100.5	100	100	100	100	100	100	98.5	86	86	86	86	86	86	86	86	86	96	96	96	96	95.5	92.5	95	91	91	91	91	91	91	91	88	87.5	
10	11	12	13	14	15	16	11	18	19	20	21	22	23	24	25	56	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	

	67 AA.						1.		Bee venom; isoform; immunosuppressant; vaccine;
	ABB08330 standard; protein; 67 AA.				18-JUN-2002 (first entry)		Bee venom protein Api m 6.01.		soform; immunosu
RESULT 1 ABB08330	ABB08330 sta		ABB08330;		18-JUN-2002		Bee venom pr		Bee venom; i
RESI ABB	H	×	Ą	ğ	ŭ	X	DE	×	Š

ALIGNMENTS

Bee venom; isoform; immunosuppressant; vaccine; Api m 6; immune response; bee venom hypersensitivity; antibody; protein purification; Api m 6.01; immunotherapy; allergen

16-FEB-2001; 2001WO-IB01736. WO200188085-A2. 22-NOV-2001

(ECOL-) ECOLE POLYTECHNIQUE FEDERALE LAUSANNE.

18-FEB-2000; 2000US-0506978.

Spertini F;

WPI; 2002-082988/11.

New bee venom polypeptides, useful for modulating immune responses e.g. in individual hypersensitive to the venom and for identifying

```
Example 2; Page 26; 32pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (ECOL-) ECOLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22-NOV-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Spertini F;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABB08332;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABB08332
    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                              The present sequence is that of one the four isoforms of Api m 6, designated Api m 6.01. The sequence represents the central amino acid sequence shared by all four isoforms (see ABB08313, ABB08313 and ABB08332 and ABB08332 and ABB08333. The specification describes a substantially pure polypeptide, Api m 6, derived from bee venom and found in four isoforms. The proteins of the invention have immunosuppressant activity and may form the basis of a vaccine. Api m 6 is useful for modulating an immune response, i.e. as an allergen for immunotherapy. The protein is useful for identifying an individual at risk for bee venom hypersensitivity. The method comprises administering Api m 6 to the individual and measuring an immune response raised, where a detectable immune response indicates that the individual is at risk for bee venom hypersensitivity. Antibodies specific for Abi m 6 are useful for purifying the protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bee venom; isoform; immunosuppressant; vaccine; Api m 6; immune response; bee venom hypersensitivity; antibody; protein purification; Api m 6.02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New bee venom polypeptides, useful for modulating immune responses e.g. in individual hypersensitive to the venom and for identifying individual at risk for bee venom hypersensitivity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
individual at risk for bee venom hypersensitivity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 391; DB 23;
Pred. No. 8.9e-32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (ECOL-) ECOLE POLYTECHNIQUE FEDERALE LAUSANNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABB08331 standard; protein; 69 AA.
                                                                             Example 2; Page 26; 32pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'label= Pro, Leu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /label= Pro, Leu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bee venom protein Api m 6.02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16-FEB-2001; 2001WO-IB01736.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-FEB-2000; 2000US-0506978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        67; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mmunotherapy; allergen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2002-082988/11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 VPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200188085-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Spertini F;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABB08331;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABB0833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \mathbb{F} \times 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
```

à

```
ö
                               designated Api m 6.02. All four isoforms share a common central amimo acid sequence shared by all four isoforms (see ABB08330, ABB08332 and ABB08333). The specification describes a substantially pure polypeptide, Api m 6, derived from bee venom and found in four isoforms. The proteins of the invention have immunosuppressant activity and may form the basis of a vaccine. Api m 6 is useful for modulating an immune response, i.e. as an allergen for immunotherapy. The protein is useful for identifying an individual at risk for bee venom hypersensitivity. The method comprises administering Api m 6 to the individual and measuring an immune response raised, where a detectable immune response indicates that the individual is at risk for bee venom hypersensitivity. Antibodies specific for Abi m 6 are useful for purifying the protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          venom; isoform; immunosuppressant; vaccine; Api m 6; immune response; venom hypersensitivity; antibody; protein purification; Api m 6.03;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GGFGGLGGRCKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present sequence is that of one the four isoforms of Api m 6, designated Api m 6.03. All four isoforms share a common central amimo acid sequence shared by all four isoforms (see ABB0833), ABB08331 and ABB08333). The specification describes a substantially pure polypeptide, Api m 6, derived from bee venom and found in four isoforms. The proceins of the invention have immunosuppressant activity and may form the basis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New bee venom polypeptides, useful for modulating immune responses e.g. in individual hypersensitive to the venom and for identifying individual at risk for bee venom hypersensitivity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC
present sequence is that of one the four isoforms of Api m 6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; Score 391; DB 23;
100.0%; Pred. No. 9.1e-32;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   POLYTECHNIQUE FEDERALE LAUSANNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABB08332 standard; protein; 71 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 2; Page 26; 32pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bee venom protein Api m 6.03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16-FEB-2001; 2001WO-IB01736.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-FEB-2000; 2000US-0506978.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18-JUN-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity 100.
ses 67; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                immunotherapy; allergen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2002-082988/11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200188085-A2.
```

```
ö
of a vaccine. Api m 6 is useful for modulating an immune response, i.e. as an allergen for immunotherapy. The protein is useful for identifying an individual at risk for bee venom hypersensitivity. The method comprises administering Api m 6 to the individual and measuring an immune response raised, where a detectable immune response indicates that the individual is at risk for bee venom hypersensitivity. Antibodies specific for Abi m 6 are useful for purifying the protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The present sequence is that of one the four isoforms of Api m 6, designated Api m 6.04. All four isoforms share a common central amimo acid sequence shared by all four isoforms (see ABB08330, ABB08331 and ABB08332). The specification describes a substantially pure polypeptide, Api m 6, derived from bee venom and found in four isoforms. The proteins of the invention have immunosuppressant activity and may form the basis of a vaccine. Api m 6 is useful for modulating an immune response, i.e. as an allergen for immunotherapy. The protein is useful for identifying
                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                            64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New bee venom polypeptides, useful for modulating immune responses e.g. in individual hypersensitive to the venom and for identifying individual at risk for bee venom hypersensitivity
                                                                                                                                                                                                                                                                  GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC
                                                                                                                                                                                                                                             1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC
                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bee venom; isoform; immunosuppressant; vaccine; Api m 6; immune bee venom hypersensitivity; antibody; protein purification; Api immunotherapy; allergen.
                                                                                                                                                                                                             ;
0
                                                                                                                                                                           Length 71;
                                                                                                                                                                         DB 23;
                                                                                                                                                                                                             ö
                                                                                                                                                                        ch 100.0%; Score 391, DB 23; Similarity 100.0%; Pred. No. 9.3e-32; 67; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (ECOL-) ECOLE POLYTECHNIQUE FEDERALE LAUSANNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Example 2; Page 26; 32pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                   ABB08333 standard; protein; 73 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bee venom protein Api m 6.04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'label= Pro,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /label= Pro,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16-FEB-2001; 2001WO-IB01736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-FEB-2000; 2000US-0506978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2002-082988/11.
                                                                                                                                                                                                                                                                                                              67
                                                                                                                                                                                                                                                                                                                                            VPRSKCG 71
                                                                                                                                        71 AA;
                                                                                                                                                                                                                                                                                                              61 VPRSKCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200188085-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Spertini F;
                                                                                                                                                                                                                                                                                                                                              65
                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABB08333
                                                                                                                                                                           Query Match
                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sb.
                                                                                                                                                                                           Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                   ABB08333
                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                   2555555%8
                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                             ð
```

```
ö
an individual at risk for bee venom hypersensitivity. The method comprises administering Api m 6 to the individual and measuring an immune response raised, where a detectable immune response indicates that the individual is at risk for bee venom hypersensitivity. Antibodies specific for Abi m 6 are useful for purifying the protein.
                                                                                                                                                                                               09
                                                                                                                                                                                                                           64
                                                                                                                                                                                                                 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CXCR1; CXCR2; cyclooxygenase; lipoxygenase; phospholipase; protease; inflammatory disease; gene therapy; cancer; autoimmune disease; pain; chemokine imbalance; rheumatorid arthritis; multiple sclerosis; psoriasis; systemic lupus erythematosus; Crohn's disease; vasculitis; scleroderma; metastatic cancer; Alzheimer's disease; wound healing;
                                                                                                                                                                                               1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ated nucleic acids encoding the bee venom protein PX3.101 useful treating autoimmune and inflammatory disorders such as rheumatoid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present sequence represents the protein PX3.101, which is a honey
                                                                                                                                                               0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bee venom isolated Apis mellifera. PX3.101 inhibits the binding of interleukin: 8 (II-8) to its receptor (e.g. CXCR1 and CXCR2) and inhibits a variety of enzymes (e.g. cyclooxygenases, lipoxygenases, phospholipases and proteases) associated with inflammatory diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Protein PX3.101; honey bee; venom; interleukin-8; IL-8; receptor;
                                                                                                                                Length 73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "this region contains 5 GGX repeats"
                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Amino acid sequence of honey bee venom PX3.101 protein.
                                                                                                                              ; Score 391; DB 23;
; Pred. No. 9.6e-32;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note= "signal peptide"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                         AAY69209 standard; Protein; 92 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 2; Fig 3A-B; 83pp; English.
                                                                                                                              100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (PANP-) PAN PACIFIC PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98US-0100172.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99GB-0021605
                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                              67; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      aging process; antigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2000-185368/17.
                                                                                                                                                                                                                                                            67
                                                                                                                                                                                                                                                                                          71
                                                                                                                                Query Match
Best Local Similarity
                                                                                                73 AA;
                                                                                                                                                                                                                                                            61 VPRSKCG
                                                                                                                                                                                                                                                                                          65 VPRSKCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Isolated nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N-PSDB; AAZ61247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Apis mellifera.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Lu Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14-SEP-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                        30-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GB2341389-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-MAR-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         arthritis
                                                                                                                                                                                                                                                                                                                                                                                                        AAY69209;
                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chi X,
                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                       88888888
                                                                                                                                                                                               à
                                                                                                                                                                                                                           윱
                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                         셤
```

expressed DNA

printed

the

ö

Gaps

. 0

Indels

Score 108; DB 22; Pred. No. 0.041; 7; Mismatches 30;

27.6%;

3843 AA;

Length 3843;

11 KCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKVCVPRSKC 66

```
specification, but was obtained in electronic format directly from MIPO
at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                       1130 KCPLGQVFDECGDGCALSCDDLPSKGSCKRECVEGCKCPHGEYVNEDGECVPKKMC 1185
                                    (ABBS)7737-ABB/2072).
The sequence data for this patent did not form part of
  discloses genomic DNA sequences (ABL16176-ABL30511), essequences (ABL01840-ABL16175) and the encoded proteins (ABBS7737-ABB72072).
                                                                                                               Query Match
Best Local Similarity 33.20,
Thes 19, Conservative
                                                                                                     Sequence
                                                                                                                                                                                                                                                           RESULT 7
                                                                                                                                                                                                                                                                                                                   g
    និត្តក្តិក្តិក្តិនិង
                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
The nucleic acids may be used for the recombinant production of PX3.101 proteins either in vivo (as part of a gene therapy proteool)

or in vitro (as a fermentation culture). The nucleic acids may also can seed as probes to identify similar sequences in samples. The PX3.101 protein may be used for the treatment of inflammatory diseases, cancers, autoimmune diseases, pain and/or diseases associated with chemokine (especially IL-8) imbalances such as rheumatoid arthritis, multiple sclerosis, psoriasis, systemic lupus erythematosus (SLB), Crohn's disease, vasculitis, scleroderma, metastatic cancer and Alzheimer's disease, in humans. It is also disclosed that the proteins may be used to accelerate wound healing, reduce several aging processes and protect against ultraviolet light. The proteins may also be used as antigens in the production of antibodies specific for PX3.101. The antibodies may come used as diagnostic agents to detect PX3.101 protein in samples and
                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention relates to an isolated nucleic acid detection reagent capable of derecting 1000 or more genes from Drosophila. The invention is useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher enkaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention
                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                             85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New isolated nucleic acid detection reagent for detecting 1000 or more genes from Drosophila and for elucidating cell signalling and cell-cell
                                                                                                                                                                                                                                                                                                                   1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC
                                                                                                                                                                                                                                                                                                                                 26 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC
                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       developmental biology; cell signalling; insecticide;
                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure; SEQ ID NO 41379; 21pp + Sequence Listing; English.
                                                                                                                                                                                                                                                           Length 92;
                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila melanogaster polypeptide SEQ ID NO 41379
                                                                                                                                                                                                                                                         100.0%; Score 391; DB 21;
100.0%; Pred. No. 1.2e-31;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Myers EW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABB71529 standard; Protein; 3843 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000US-191637P
2000US-0614150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                       67; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila melanogaster,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Venter JC, Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2001-656860/75.
                                                                                                                                                                                                                                                                                                                                                                         61 VPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                   92
                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (PEKE ) PE CORP NY
                                                                                                                                                                                                                                92 AA;
                                                                                                                                                                                                                                                                                                                                                                                                  VPRSKCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2001-656860/
N-PSDB; ABL15632.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila; de
pharmaceutical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nteractions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23-MAR-2000;
11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                     98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABB71529;
                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABB71529
                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                   ò
```

```
1455 KCPSGSSYSTCANPCPATCLSLANPSYCPSTLP-----CARGCECQXGHILSGTS-CV 1506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This sequence represents a pig sperm egg-binding protein designated protein p105. Porcine sperm proteins which bind the zona pellucida in a species-specific manner were isolated. Separation by gel electrophoresis resulted in bands of proteins with molecular weights of 130, 150 and 170 kD, under native conditions but bands of 105 and 45 kD were observed when the proteins were separated under denaturing conditions. Compounds which bind these proteins can be used for contraception or fertilisation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                       sperm; egg-binding protein; zona pellucida; contraception;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11 KCPSNEIFSRCDGRC-----QRPCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 107.5; DB 20; Length 2476;
Pred. No. 0.031;
9; Mismatches 18; Indels 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sperm egg-binding protein - useful
                                                                                                                                                     Pig p105 zona pellucida-binding protein.
AAW67738 standard; Protein; 2476 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; Fig 8A-B; 47pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA encoding porcine sperm egg
producing recombinant protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                 94US-0276967.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94US-0276967.
                                                                                                   16-MAR-1999 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (TEXA ) UNIV TEXAS SYSTEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Garbers DL, Hardy DM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1999-080410/07.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2476 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-PSDB; AAV81446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRSKCG
                                                                                                                                                                                                       Pig; porcine;
fertilisation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19-JUL-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                 19-JUL-1994;
                                                                                                                                                                                                                                                                                                                                                                               22-DEC-1998,
                                                                                                                                                                                                                                                                                                                                US5851817-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22;
                                                                                                                                                                                                                                                                              Sus scrofa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       62
                                                    AAW67738;
                                                                                                                                                                                                       Pig;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
```

RESULT 8 94M14748

g

```
The invention relates to isolated polynucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (PCR) primers, oligomers and for chromosome and gene mapping, and in recombinant production of (II). The polynucleotides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy techniques to restore normal activity of (II) or to treat disease states involving contrating antibodies against it, detecting or quantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical imaging of sites expressing (II). (I) and (II) are useful for treating disorders involving aberrant protein expression or biological activity. The polypeptide and polynucleotide sequences have applications in disposition for gene mapping, identification of mutations responsible for generic disorders or other traits to assess biodiversity and to produce other types of data and products dependent on DNA and amino acid sequences. ABG00010-ABG30377 represent novel human and manner and an annowable of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Note: The sequence data for this patent did not appear in the printed specification, but was obtained in electronic format directly from WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1623 ECPPNSHYELCADTCSLGCSALSAPPQCQDGCAEGCQCDSGFLXN-GQACVPIQQCG 1678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11 KCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fragment 13; pNV11-ST; IgG-Fc binding protein; immunoglobulin; K17; human; colonic epithelium; monoclonal antibody; K9; probe.
                                                                                                                                                                                                                                                                                                                                                                                                                            New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 22; Length 2957;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27.2%; Score 106.5; DB 22; Leugen.
36.8%; Pred. No. 0.046;
Mismatches 29; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 20; SEQ ID No 52573; 103pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAW14749 standard; Protein; 5405 AA.
                                                                                                                                                                                                                                                                                                                 Tang YT,
                                                                                                                                                         30-MAR-2001; 2001WO-US08631
                                                                                                                                                                                                   31-MAR-2000; 2000US-0540217
                                                                                                                                                                                                                        23-AUG-2000; 2000US-0649167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity 36.8
tes 21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IgG-Fc binding protein.
                                                                                                                                                                                                                                                                                                                                                             2001-639362/73.
                                                                                                                                                                                                                                                                                                                 Liu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2957 AA;
                                                                                                                                                                                                                                                                     (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                  N-PSDB; AAS86401
                                                                 WO200175067-A2
                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  biodiversity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13-MAY-1997
                                                                                                                                                                                                                                                                                                                 Drmanac RT,
                                                                                                             11-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAW14749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best
  ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This sequence is encoded by fragment 13 which is a Notl/KpnI fragment from DNV11-ST. This sequence represents a portion of the IgG-FC binding protein of human colonic epithelium. This sequence was used in the isolation of the full length sequence given in AAM14749. mRNA isolated from human colonic epithelial tissue was used to prepare a CDNA library. This was screened using monoclonal antibodies K9 and K17 which bind to the large and small components of the binding protein. Active clones, see also AAM63077-81, were used to derive probes for screening a second DNA library from human colonic epithelial tissue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11 KCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA derived from colonic epithelium encoding IgG-Fc binding protein - used in the mapping and analysis of IgG-Fc binding protein mRNA
                                                                                                                                                                                                                                                                                       Fragment 13; pNV11-ST; IgG-Fc binding protein; immunoglobulin; K17; human; colonic epithelium; monoclonal antibody; K9; probe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human; chromosome mapping; gene mapping; gene therapy; forensic; food supplement; medical imaging; diagnostic; genetic disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 2594;
                                                                                                                                                                                                                                             IgG-Fc binding protein encoded by 7.8 kb fragment of pNV11-ST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 106.5; DB 16; Length
Pred. No. 0.041;
6; Mismatches 29; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel human diagnostic protein #22205.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; Page 71-84; 132pp; Japanese.
                                                                                                             AAW14748 standard; Protein; 2594 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABG22214 standard; Protein; 2957 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94JP-0129487.
94JP-0222547.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                95WO-JP00638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          95JP-0109927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    36.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHUS ) CHUGAI SEIYAKU KK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Morikawa M;
1507 PLSQCG 1512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1995-358632/46.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2594 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-PSDB; AAT63073
                                                                                                                                                                                                                                                                                                                                                                                                       WO9527057-A1
                                                                                                                                                                                                   L3-MAY-1997
                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3-APR-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-MAR-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-APR-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24-AUG-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                    12-OCT-1995.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Harada N,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABG22214;
                                                                                                                                                         AAW14748;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
```

7;

1; Gaps

Best Loca Matches

RESULT 9

g

ABG2221

```
The present invention describes compounds (1) for the immunotherapy and diagnosis of colon cancer. Also described: (1) a method for detecting the presence of cancer in a patient; (2) a method for stimulating and/or expanding T cells specific for a tumour protein; (3) an isolated T cell population comprising T cells prepared by the method of (2); (4) a method for stimulating an immune response in a patient; (5) a method for treating cancer in a patient; and (6) a method for inhibiting the development of cancer in a patient. (1) have immunostimulant and evelopment cancer in a patient. (1) have immunostimulant and avbressit to ABPS5343 to ABPS5349 I represent human colon cancer/tumour related sequences used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1531 ECPPNSHYELCADICSLGCSALSAPPQCQDGCAEGCQCDSGFLYN-GQACVPIQQCG 1586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention relates to isolated polynucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (PCR) primers, oligomers, and for chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11 KCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKCG 67
                                                                                   polynucleotide, useful for the preparation of a composition for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New isolated polynuclectide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess biodiversity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human, chromosome mapping, gene mapping, gene therapy, forensic, food supplement, medical imaging, diagnostic, genetic disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27.2%; Score 106.5; DB 24; Length 5405; 36.8%; Pred. No. 0.078; tive 6; Mismatches 29; Indels 1;
                                                                                                          stimulating an immune response against, or treating, cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 20; SEQ ID No 52575; 103pp; English.
                                                                                                                                                  Example 8; Page 511-522; 537pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel human diagnostic protein #22207.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABG22216 standard; Protein; 7337 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tang YT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31-MAR-2000; 2000US-0540217.
23-AUG-2000; 2000US-0649167.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-MAR-2001; 2001WO-US08631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18-FEB-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Drmanac RT, Liu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2001-639362/73
                      WPI; 2003-067548/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          5405 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-PSDB; AAS86403.
                                          N-PSDB; ABZ33718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200175067-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11-OCT-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABG22216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABG2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ĥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This sequence represents the IgG-Fc binding protein of human colonic epithelium. This sequence was isolated using the sequence given in AAW14748. mRNA isolated from human colonic epithelial tissue was used to prepare a cDNA library. This was screened using monoclonal antibodies K9 and K17 which bind to the large and small components of the binding protein. Active clones, see also AAT63077-81, were used to derive probes for screening a second DNA library from human colonic epithelial tissue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1531 ECPPNSHYELCADTCSLGCSALSAPPQCQDGCAEGCQCDSGFLYN-GQACVPIQQCG 1586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; colon cancer; colon tumour; immunotherapy; diagnosis; cancer; tumour; immune response; immunostimulant; cytostatic; vaccine.
                                                                                                                                                                                                                                                                                                                                                                                           NA derived from colonic epithelium encoding IgG-Fc binding protein used in the mapping and analysis of IgG-Fc binding protein mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11 KCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKVCVPRSKCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Stolk JA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 16; Length 5405;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Clapper JD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human colon tumour related protein sequence SEQ ID NO:1116.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Meagher MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Xu J, Lodes MJ, Secrist H, Benson DR, Meaghe
Wang T, Jiang Y, Smith CL, King GE, Wang A,
Skeiky XAW, Fanger GR, Vedvick TS, Carter D;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27.2%; Score 106.5; DB 36.8%; Pred. No. 0.078; tive 6; Mismatches 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 3; Page 86-113; 132pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABP55383 standard; Protein; 5405 AA
                                                                                                                                                                       94JP-0129487.
94JP-0222547.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        09-APR-2002; 2002WO-US11475.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10-APR-2001; 2001US-0833263.
03-AUG-2001; 2001US-0922217.
19-DEC-2001; 2001US-0025380.
                                                                                                          95WO-JP00638
                                                                                                                                                  95JP-0109927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                        (CHUS ) CHUGAI SEIYAKU KK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 36.8
Matches 21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                           DNA derived from colonic
                                                                                                                                                                                                                                                                                   Harada N, Morikawa M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                            WPI; 1995-358632/46.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5405 AA;
                                                                                                                                                                                                                                                                                                                                                    N-PSDB; AAT63074.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200283070-A2
                                                                                                          03-APR-1995;
                                                                                                                                                  30-MAR-1995;
                                                                                                                                                                         01-APR-1994;
                                                                                                                                                                                             24-AUG-1994;
                      WO9527057-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24-OCT-2002
                                                               12-OCT-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABP55383;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABP55383
```

g à

1;

Gaps

```
polymuclecides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy techniques to restore normal activity of (II) or to toreat disease states involving (II). (II) is useful for generating antibodies against it, detecting or quantitating a polymeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical imaging of sites expressing (II). (I) and (II) are useful for treating disorders involving aberrant protein expression or biological activity. The polymeptide and polymucleotide sequences have applications in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits to assess biodiversity and to produce other types of data and products dependent on DNA and amino acid sequences. ABG00010-ABG30377 represent novel human diagnostic amino acid sequences of the invention.

Note: The sequence data for this patent did not appear in the printed specification, but was obtained in electronic format directly from WIPO.

The publypublished_pot_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (PCR) primers, oligomers, and for chromosome and gene mapping, and in recombinant production of (II). The polynucleotides are also used in diagnostics as expressed sequence tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     389 OCPAHSHYELCGDSCPGSCPSLSAPEGCESACREGCVCDAGFVLS-GDTCVPVGQCG 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11 KCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                forensic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; chromosome mapping; gene mapping; gene therapy; forensic food supplement; medical imaging; diagnostic; genetic disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 22; Length 7337;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28; Indels
gene mapping, and in recombinant production of (II).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The invention relates to isolated polynucleotide (I) and
                                                                                                                                                                                                                                                                                                                                                                                                                                  / Match 26.0%; Score 101.5; DE Local Similarity 31.6%; Pred. No. 0.32; nes 18; Conservative 10; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 20; SEQ ID No 52574; 103pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel human diagnostic protein #22206.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABG22215 standard; Protein; 735 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tang YT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31-MAR-2000; 2000US-0540217.
23-AUG-2000; 2000US-0649167.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-MAR-2001; 2001WO-US08631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2001-639362/73.
N-PSDB; AAS86402.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Liu C,
                                                                                                                                                                                                                                                                                                                                                                                           7337 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  40200175067-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                biodiversity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drmanac RT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11-OCT-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABG22215;
                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABG2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
```

```
for identifying expressed genes. (I) is useful in gene therapy techniques to restore normal activity of (II) or to treat disease states involving (II) as useful for generating antibodies against it, detecting or quantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical imaging of sites expressing (II). (I) and (II) are useful in medical disorders involving aberrant protein expression or biological activity. The polypeptide and polynucleotide sequences have applications in disposities, forenists, gene mapping, identification of mutations responsible for genetic disorders or other traits to assess biodiversity and to produce other types of data and products dependent on DNA and amino acid sequences. ABG00010-ABG30377 represent novel human confidence data for this patent did not appear in the printed specification, but was obtained in electronic format directly from WIPO
                                                                                                                                                                                                                                                                                                                                                                   ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present sequence represents a nematode extracted anticoagulant protein (NAP). The protein has activity as an anticoagulant and/or seriprotease inhibitor. The protein contains at least one NAP domain which
                                                                                                                                                                                                                                                                                                                                                                                                                        68 QCPAHSHYBLCGDSCPVSCPSLSAPEGCESACREGCVCDAGFVLS-GDTCVPVGQCG 123
                                                                                                                                                                                                                                                                                                                                                                                                 11 KCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKVCVPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Screening an isolated protein for Nematode-extracted Anticoagulant
Protein domains
                                                                                                                                                                                                                                                                                                                                                                   1;
                                                                                                                                                                                                                                                                                                                                 DB 22; Length 735;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nematode extracted anticoagulant protein; NAP; anticoagulant; serine protease inhibitor; NAP domain; factor VIIa/TP.
                                                                                                                                                                                                                                                                                                                           Similarity 31.6%; Score 100.5; DB 22; Length Similarity 31.6%; Pred. No. 0.054; S. Conservative 10; Mismatches 28; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mature nematode extracted anticoagulant protein AcaNAPc2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          YR;
PEH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Jespers LS, Laroche
Moyle M, Stanssens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure; Columns 142-144; 197pp; English.
                                                                                                                                                                                                                                                             at ftp.wipo.int/pub/published pct sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ź
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY30432 standard; Protein; 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94US-0326110.
95US-0461965.
95US-0465380.
95US-0486397.
95US-0486399.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          oergum PW, Gansemans YGJ,
Lauwereys MJ, Messens JHL,
Vlasuk GP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96US-0634641,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96US-0634641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       95WO-US13231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (CORV-) CORVAS INT INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1999-539569/45.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ancylostoma caninum.
                                                                                                                                                                                                                                                                                               735 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19-APR-1996;
                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Simi
Matches 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17-OCT-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18-OCT-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         L5-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US5955294-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19-APR-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   05-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    05-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     05-JUN-1995
                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY30432;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY30432
       g
                                                                                                                                                                                                                                                                                                                                                                                                    ઠ
```

```
э
Э
has selective inhibitory activity for factor VIIa/TF. The specification describes a method for screening an isolated protein at least one domain for factor VIIa/TF selective inhibitory activity. The method comprises determining the time to clotting effected by a concentration of the isolated protein in an ex vivo prothrombin time (PT) assay and an ex vivo prothrombin time (PT) assay and an ex vivo prothrombin time (PT) assay and in ex vivo prolongation of clotting effected by the isolated protein in each of the PT and aPTT assay, with respect to a baseline clotting value for each assay, where prolongation of clotting is calculated as fold alevation of clotting time relative to a baseline clotting value, where a doubling of clotting time is deemed a two-fold elevation; and calculating a PT to aPTT prolongation ratio, where a ratio at least useful for determining if a protein has factor VIIa/TF inhibitory
                                                                                                                                                                                                                                                                                                                                                                     57
                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                        CGENEKYDSCGSKECDKKCKYDGVEEEDDEEPNV---PCLVRVCHQDCVCEEGFYRNKD
                                                                                                                                                                                                                                                                                                                                                                   11 KCPSNEIFSRCDGR-CQRFC------PNVVPKPLCIKICAPGCVCRLGYLRNKK
                                                                                                                                                                                                                                                                                                                                   24; Indels 16; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A. caninum nematode-extracted anticoagulant protein AcaNAPc2(mature)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Moyle M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nematode-extracted anticoagulant protein; AcaNAPc2; blood clotting; canine hookworm; thrombosis; vaccine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New cDNA molecule encoding a protein having factor Xa inhibitory activity for preventing and treating blood clotting disorders, comprises nematode-extracted anticoagulant protein domains
                                                                                                                                                                                                                                                                                                  25.6%; Score 100; DB 20; Length 84; 30.4%; Pred. No. 0.0093; ive 8; Mismatches 24; Indels 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     J, Stanssens PBH, Jespers LS, Gansemans YGJ,
Messens JHL, LaRoche YR, Vlasuk GP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAB15317 standard; Protein; 84 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                95WO-US13231.
97US-0809455.
94US-0326110.
95US-0461965.
95US-0465380.
95US-0486397.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0249451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    95US-0486399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19-DEC-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                   21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (CORV-) CORVAS INT INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                      58 KVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DKCVSAEDC 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ancyclostoma caninum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2000-531359/48.
                                                                                                                                                                                                                                                                                                                  Best Local Similarity
Matches 21; Conserv
                                                                                                                                                                                                                                                                     84 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-PSDB; AAA73373.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18-OCT-1994;
05-JUN-1995;
05-JUN-1995;
05-JUN-1995;
05-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Lauwereys MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17-0CT-1995;
17-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US6087487-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bergum PW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAB15317;
                                                                                                                                                                                                                                                                                                                                                                                                    Ŋ
                                                                                                                                                                                                                                        activity.
                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAB15317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                     õ
```

Example. A; Fig 16; 197pp; English

```
3,
              The present sequence is the Ancyclostoma caninum nematode-extracted anticoagulant protein AcaNAPc2. Proteins of this kind have been shown to be effective at preventing blood clotting without causing excessive bleeding. The protein can be used in blood collection tubes to aid the isolation of plasma from the blood, to prevent thrombosis which may be inhed to the rupture of an atherosclerotic plaque, acute myocardial infarction, angina, thrombolytic therapy, percutaneous transluminal coronary angioplasty, disseminated intravascular coagulopathy, infection, cancer and septic shock, and to produce antibodies. In the latter instance, the antibodies can be raised in order to detect infection by mematodes (the coding sequence can also be used for this) or as diagnostic tests. The protein can also be used as a vaccine against
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5 QCGENEKYDSCGSKECDKKCKYDGVEEEDDEEFNV---PCLVRVCHQDCVCEEGFYRNKD 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11 KCPSNEIFSRCDGR-CQRFC------PNVVPKPLCIKICAPGCVCRLGYLRNKK 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                      16;
                                                                                                                                                                                                                                                                                                                                                                                                    Score 100, DB 21; Length 84; Pred. No. 0.0093; 8; Mismatches 24; Indels :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Search completed: November 17, 2003, 08:08:06
                                                                                                                                                                                                                                                                                                                                                                                                         25.6%;
                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 30.4%
Matches 21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 58 KVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62 DKCVSAEDC 70
                                                                                                                                                                                                                                                                                                               nematode parasites.
                                                                                                                                                                                                                                                                                                                                                         84 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Job time : 41 secs
                                                                                                                                                                                                                                                                                                                                                            Sequence
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
```

```
GenCore version 5.1.6

Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

Run on: November 17, 2003, 08:03:11; Search time 11 Seconds

(without alignments)

286.435 Million cell updates/sec
```

Title: US-09-506-978-1
Perfect score: 391
Sequence: 1 GGFGGLGGRGKCPSNEIFSR......CRLGYLRNKKKVCVPRSKCG 67

Scoring table: BLOSUM62 Gapext 0.5

Gapop 10.0 , Gapext 0.5 Searched: 127863 seqs, 47026705 residues Total number of hits satisfying chosen parameters: 127863

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Maximum D5 Sey length: 2000000000

Post-processing: Minimum Match 1008

Maximum Match 1008

Listing first 45 summaries

Database : SwissProt_41:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Resnit		* C			SUMMAKIES	
	Score	Match	Length	B	ID	Description
	-	28.9	1	М	ZAN MOUSE	mus m
	0	27.9	2812	Н	ZAN HUMAN	S homo
3 10		27.5	2476	Н	ZAN_PIG	Bus E
4 104		26.7	26	Н	AMCI APIME	
		26.5	2813	Н	VWF CANFA	
	•	26.0	937	Н	VWF BOVIN	C)
		25.2	2282	Н	ZAN RABIT	P57999 oryctolagus
œ	86	25.1	115	Н	A62F DROME	2 drosc
σ	86	25.1	2813	Н	VWF HUMAN	P04275 homo sapien
10	25	24.8	77	Н	CVP6 PIMHY	Dimp
	•	23.4	2482		WWF PIG	
	90.5	23.1	3133	Н	HMCT BOMMO	
13	98	22.0	1700		BAR3_CHITE	_
	•	21.6	1513	H	MUC2_RAT	
'n	80.5	20.6	63	۲	ICE1_ASCSU	
	•	20.6	66	Н	YOJ2_CAEEL	P34625 caenorhabdi
17	80	20.5	1370	٦	IG1R_RAT	
~		20.5	1373	-	IG1R_MOUSE	
•		20.3	351	Н	CRMB_COWPX	073559 cowpox viru
_	78.5	20.1	65		ICE2_ASCSU	ascaris
1	76.5	19.6	72		MT1A MYTED	mytilus
~³	76.5	19.6	72		MT1B_MYTED	-
m	76.5		349		CRMB_CAMPS	Q8uya7 camelpox vi
4			855		ST14_MOUSE	
D.	75.5	19.3	349		CRMB_VARV	vario
v			5179		MUC2_HUMAN	homo
27	75	19.2	926	Н	TSP3 MOUSE	Q05895 mus musculu
28	75		4289		TENX HUMAN	homo
29	73	18.7	9		MT PERFL	
0	72.5	18.5	1416			caenor
31	72	18.4	326	Н		25 myxon
32	72	18.4	926	Н	TSP3_HUMAN	e homo
33	72	18.4	1367	-	IGIR HUMAN	59 homo

Q29116 sus scrofa P19398 ascaris suu	P8024/ mycilus edu Q9hc84 homo sapien P09862 oncorhynchu	P25127 esox lucius Q10731 bombyx mori	Q62799 rattus norv P80249 mytilus edu	P07216 pleuronecte P55945 pseudopleur	P98158 rattus norv
TENA PIG ITRI ASCSU	MT12 MYTED MUSB HUMAN MTB ONCMY	MT ESOLU FPIF BOMMO	ERB3_RAT MT14_MYTED	MT_PLEPL MT_PSEAM	LRF2_RAT
44					н
1746	5703 60	77	1339	909	4660
18.2	17.8 17.8	17.6	17.6	17.4	17.4
70.5	69.5 69.5 69	69	69 68.5	68 68	89
4.86	3.7 3.8 3.8	ε 4 ο ο	4 4 1 2	4 4 6 4	45

ALIGNMENTS

```
NEBELT 1

ZAM MOUSE

TO ARM MOUSE

TO COCT-2001 (Rel. 40, Last sequence update)

TO 6-0CT-2001 (Rel. 40, Last sequence update)

TO 7 16-0CT-2001 (Rel. 40, Last sequence update)

TO 8 Mus musculus (Mouse)

TO 8 Musculus (Mouse)
```

us-09-506-978-1.open.rsp

```
4743 KCPANSLYTHCLPTCLPSCSN--PDGRCEGTSHKAPSTCREGCVCQPGYLLN-KDTCVHK 4799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11 KCPSNEIFSRCDGRCQRFCPNVVPKPLC-----IKICAPGCVCRLGYLRNKKKVCVPR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PARTIAL SEQUENCE FROM N.A. MEDILINE=99018118; PubMed=9799793; Glockner G. Scherer S., Schattevoy R., Boright A.P., Weber J., Tsui L.-C., Rosenthal A.; Tsui L.-C., Rosenthal A.; "Large-scale sequencing of two regions in human chromosome 7q22: analysis of 650 kb of genomic sequence around the EPO and CUTL1 loci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 1810-2812 FROM N.A. (ISOFORM 1).
MEDLINB=21138439; PubMed=11239002;
Wilson M.D., Riemer C., Martindale D.W., Schnupf P., Boright A.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human)
busaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
NCBI_TaxID=9606,
                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ZAN HUMAN STANDARD; PRT; 2812 AA.
Q9Y493; O00218; Q96L85; Q96L86; Q96L89; Q96L99; Q96L90;
Q9BXN9; Q9BZ83; Q9BZ84; Q9BZ86; Q9BZ87; Q9BZ88;
L6-OCT-2001 (Rel. 40, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
Z8-FEB-2003 (Rel. 41, Last annotation update)
Zonadhesin precursor.
                       (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8; Mismatches 22; Indels 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 113; DB 1; Length 5376;
Pred. No. 0.00034;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. (ISOFORMS 1; 2; 3; 4; 5 AND 6).
TISSUB=Testis;
Cheung T.L., Wassler M.J., Cornwall G.A., Hardy D.M.;
"Multiple intra-species variants of human zonadhesin.";
Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                   (GLCNAC. . . . (GLCNAC. . . . (GLCNAC. . . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 579908 MW; 0E44DB77DF2A2620
                                       GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                          (GLCNAC.
     N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      reveals 17 genes.";
Genome Res. 8:1060-1073(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ch 28.9%;
1 Similarity 37.5%;
24; Conservative (
     1:||
4800 NQCG 4803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        64 SKCG 67
                                                                                                                                                         CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                    CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
CARBOHYD
     CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                             CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 2
ZAN HUMAN
TO C9949-9
AC C998XN
AC C998XN
DT 28-FE
DT 28-F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
         업
80 X HEPTAPEPTIDE REPEATS (APPROXIMATE) (MUCIN-LIRE DOWAIN). WWFD I (PARTIAL). WWFD 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VWED 3.

VWED 4.

VWED 4.

VWED 6 (PARTIAL).

VWED 7 (PARTIAL).

VWED 9 (PARTIAL).

VWED 10 (PARTIAL).

VWED 10 (PARTIAL).

VWED 11 (PARTIAL).

VWED 11 (PARTIAL).

VWED 13 (PARTIAL).

VWED 13 (PARTIAL).

VWED 14 (PARTIAL).

VWED 15 (PARTIAL).

VWED 16 (PARTIAL).

VWED 17 (PARTIAL).

VWED 19 (PARTIAL).

VWED 19 (PARTIAL).

VWED 19 (PARTIAL).

VWED 20 (PARTIAL).

VWED 21 (PARTIAL).

VWED 21 (PARTIAL).

VWED 22 (PARTIAL).

VWED 23 (PARTIAL).

VWED 24 (PARTIAL).

VWED 24 (PARTIAL).

VWED 23 (PARTIAL).

VWED 24 (PARTIAL).

VWED 24 (PARTIAL).

VWED 25 (PARTIAL).

VWED 24 (PARTIAL).

VWED 25 (PARTIAL).

VWED 27 (PARTIAL).

VWED 27 (PARTIAL).

VWED 28 (PARTIAL).

VWED 28 (PARTIAL).

VWED 28 (PARTIAL).

VWED 27 (PARTIAL).

VWED 28 (PARTIAL).

VWED 28 (PARTIAL).

VWED 28 (PARTIAL).

VWED 29 (PARTIAL).

VWED 27 (PARTIAL).

VWED 28 (PARTIAL).

VWED 28 (PARTIAL).

VWED 29 (PARTIAL).

VWED 21 (PARTIAL).

VWED 21 (PARTIAL).

VWED 21 (PARTIAL).

VWED 21 (PARTIAL).

VWED 22 (PARTIAL).

VWED 23 (PARTIAL).

VWED 24 (PARTIAL).

VWED 26 (PARTIAL).

VWED 27 (PARTIAL).

VWED 27 (PARTIAL).

VWED 28 (PARTIAL).

VWED 29 (PARTIAL).

VWED 29 (PARTIAL).

VWED 20 (PARTIAL).

VWED 21 (PARTIAL).

VWED 21 (PARTIAL).

VWED 21 (PARTIAL).

VWED 21 (PARTIAL).

VWED 22 (PARTIAL).

VWED 23 (PARTIAL).

VWED 24 (PARTIAL).

VWED 26 (PARTIAL).

VWED 27 (PARTIAL).

VWED 27 (PARTIAL).

VWED 27 (PARTIAL).

VWED 28 (PARTIAL).

VWED 29 (PARTIAL).

VWED 29 (PARTIAL).

VWED 20 (PARTIAL).

VWED 20 (PARTIAL).

VWED 21 (PARTIAL).

VW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11281
1670
22657
22660
22880
22820
23820
33180
33180
33100
33100
33100
33100
33100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
```

63

m

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the BMBL outstation - the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@ibs.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN: DURING SPERM MIGRATION THROUGH THE REPRODUCTIVE TRACTS, THE MUCIN-LIKE DOMAIN MIGHT INHIBIT INAPPROPRIATE TRAPPING OF SPERMATOZAO. OR PROMOTING ADHESION TO THE OVIDUCTAL ISTHMUS.
DOMAIN: The VWFD domain 2 may mediate covalent oligomerization (by similarity to human intestinal mucin MUC2).
SIMILARITY: Contains 3 MAM domains.
SIMILARITY: Contains 4 VWFD domains.
SIMILARITY: Contains 1 EGF-like domain.
SIMILARITY: Contains 1 EGF-like domain.
CAUTION: Ref. 2 sequence differs from that shown due to transposition of a number of exons.
                                                                                                                                                                                                                                                                                                                                                                                                                                   zonadhesin gene (ZAN).";
Genomics 41:119-122(1997).
-!- FUNCTION: BINDS IN A SPECIES-SPECIFIC MANNER TO THE ZONA PELLUCIDA OF THE EGG. MAY BE INVOLVED IN GAMETE RECOGNITION AND/OR SIGNALING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN, EXCLUSIVELY ON THE APICAL REGION OF THE SPERM HEAD (BY SIMILARITY).
ALTERNATIVE PRODUCTS:
Cheung T.L., Hardy D.M., Schwartz S., Scherer S.W., Tsui L.-C., Miller W., Koop B.F.; "Comparative analysis of the gene-dense ACHE/TFR2 region on human chromosome 7q22 with the orthologous region on mouse chromosome 5."; Nucleic Acids Res. 29:1352-1365(2001).
                                                                                                                                                                                                                                                                            TISSUE-Testie;
MEDLINE-97271566; PubMed-9126492;
Gao Z., Harumi T., Garbers D.L.;
"Chromosome localization of the mouse zonadhesin gene and the human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IsoId=Q9Y493-7; Sequence=VSP_001426, VSP_001427; TISSUE SPECTITY: IN TESTIS; PRIMARILY IN HAPLOID SPERMATIDS. DOMAIN: THE MAM DOMAINS PROBABLY MEDIATE SPERM ADHESION TO THE ZONA PELLUCIDA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Name=5;
IsoId=29Y493-5; Sequence=VSP_001420, VSP_001421;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IsoId=09Y493-3; Sequence=VSP_001428, VSP_001429;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IsoId=Q9Y493-4; Sequence=VSP_001424, VSP_001425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IsoId=Q9Y493-6; Sequence=VSP_001422, VSP_001423;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IsoId=09Y493-2; Sequence=VSP_001430, VSP_001431;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Event=Alternative splicing; Named isoforms=7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUBUNIT: PROBABLY FORMS COVALENT OLIGOMERS.
                                                                                                                                                                                                                                            SEQUENCE OF 2375-2683 FROM N.A. (ISOFORM 7).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IsoId=Q9Y493-1; Sequence=Displayed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -... email to license@isb-e
EMBL, AF332975; AAKO1431.1; -..
EMBL, AF332975; AAKO1431.1; -..
EMBL, AF332976; AAKO1432.1; -..
EMBL, AF332979; AAKO1433.1; -..
EMBL, AF332979; AAKO1434.1; -..
EMBL, AF332979; AAKO1435.1; -..
EMBL, AV046055; AALO4411.1; -..
EMBL, AV046055; AALO4411.1; -..
EMBL, AV046055; AALO4411.1; -..
EMBL, AV046055; AALO4411.1; -..
EML, AV046055; AALO411.1; -..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Name=4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Name=2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Name=7
        \frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\fir}}}}}}}}}{\frac{\frac{\frac{\frac{\frac{\frac{\fir}}}}}}}{\fra
```

```
MIM; 602372; -.

MIM; 602000333; P:Dinding of sperm to zona pellucida; NAS.

MIM; 6020008037; P:Cell recognition; NAS.

MIM; 60237; P:Cell adhesion; NAS.

MIM; 60237; P:Cell adhesion; NAS.

MIM; 60237; P:Cell adhesion; NAS.

MIM; 60239; MAM_domain.

MIM; 60239; MAM, 3.

MART; MO0134; MAM, 3.

MART; MO0134; MAM, 3.

MART; MO0137; MAM, 3.

MART; MO0135; WWC, 4.

MART; MO0125; WWC, 4.

MART; MO0126; WWD, 4.

MAM_1; 1.

MAM_2; MAM_1; 1.

MAM_3; MAM_1; 1.

MAM_1; MAM_1; 1.

MAM_3; MAM_4; MAM_1; MAM_1; MAM_4; MAM_4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Missing (In isoform 4).
/FIId=VSP 001425.
HGVSSRYHIESELYDTLESLICQPGRPRGLRGPLRGPLRGPLAGAGALAGWRDRTLCAMECPAGTIYQSCWTPC
PASCANLADPGDCEGPCVEGCAD (in isoform 7).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HGVSSRYHISELYDTLPSILC -> YAILCQEAGAALAGWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HGVSSRYHISELYDTLPSILCQPGRPRG -> YAILCQEAG
AALAGWRDRTLCAGQQLSD (in isoform 4).
/FTId=VSP 001424.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               66 X HEPTAPEPTIDE REPEATS (APPROXIMATE) (MUCIN-LIKE DOMAIN).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HGVSS -> WAAAF (in isoform 5)
/FTId=VSP 001420.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (GLCNAC. . . . )
(GLCNAC. . . )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wissing (In isoform 5). /FTId=VSP 001421.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Missing (in isoform 6).
/FIId=VSP_001423.
                                                                                                                                                                                                                                                                                                                                                                                                                                      CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DRTLC (in isoform 6).
/FTId=VSP_001422.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (GLCNAC.
(GLCNAC.
(GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /FTId=VSP_001426.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-LINKED (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Missing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VWFD 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VWFD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WED
                                                                                                                                                                                                                                                                                                                                                                                          2812
2757
2757
204
204
368
536
1041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1308
1697
2086
2485
2744
2723
2732
2743
333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             493
1118
1118
1118
1188
1180
1190
11946
22203
2542
2501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1804
1900
1946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2597
                                                                                                                                                                                                                                                                                                                                                                                                                        2758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
DOMAIN
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OMAIN
```

us-09-506-978-1.open.rsp

```
4
                                                                                                                                                                                                                                                                                                                                                                                                                     :||: |: || :: |
2210 ECPAYSSYINCLPSCSPSCWDLDGRCE---GAKVP----SACAEGCICQPGYVLSEDK- 2260
                                                                                                                                                                                                                                                                                                                                                                                                   11 KCPSNEIFSRC------DGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKV 59
                                                        RLCLQWHPEPPLADCGCTSNGIYYQLGSSFLTEDCSQRCTC
ASSRILLCEPF -> YAILCQEAGAALAGWRDRTLCAMECP
AGTIYQSCWTPCPASCANLADPGDCEGPCVEGCASIPGYAY
                                                                                                                                     Missing (In isoform 2).
/FTId=VSP_001429.
HGVSSRYHISELYDTHESILCOPGRERGLRGHP
                                                                                                                                                                                 RLCLQWHPEPPLADCGCTSNGIYYQLGSSFLTBDCSQRCTC
ASSRLLCEPPSCRAGBVCTLGNHTQGCPPBESPCLQMPCQN
DGQCR - YALLCGBAGAALAGWRDRTLCAMBCPAGTIYQ
SCMTPCPASCANLADFGDCEPCVEGASIPGYAYSGTQSL
                                                                                                                                                                                                                                         PWLTVAAPAMASTIRSELAAGGPGEGRRQGEPDQGWNWNVS
SWPFPFLAGQQLSD (in isoform 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              J. Biol. Chem. 270:26025-26028(1995).
-!- FUNCTION: BINDS IN A SPECIES-SPECIFIC MANNER TO THE ZONA PELLUCIDA OF THE EGG. MAY BE INVOLVED IN GAMETE RECOGNITION AND/OR
  --> VRAGSRRPWGAEAPRRARPGMELERLLLALPFL
                                       HGVSSRYHISELYDTLPSILCQPGRPRGLRGPLRGRLRQHP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -!- SUBUNIT: PROBABLY FORMS COVALENT OLICOMERS.
-!- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN, EXCLUSIVELY ON THE APICAL REGION OF THE SPERM HEAD (BY SIMILARITY).
-!- TISSUE SPECIFICITY: IN TESTIS, PRIMARILY IN HAPLOID SPERMATIDS.
NOT IN LUNG, LIVER, HEART, SPLEEN, BRAIN, KIDNEY, EPIDIDYMIS.
-!- DOMAIN: THE MAM DOMAINS PROBABLY MEDIATE SPERM ADHESION TO THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                 SGTQSLPWLTVAAPAMASTTSWAAAF (in isoform
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ZONA PELLUCIDA.
DOMAIN: DURING SPERM MIGRATION THROUGH THE REPRODUCTIVE TRACTS,
THE MUCIN-LIKE DOMAIN MIGHT INHIBIT INAPPROPRIATE TRAPPING OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               H -> Q (IN REF. 1; AAK01431/AAK01432/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sus scrofa (Pig).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Butheria, Cetartiodactyla, Suina, Suidae, Sus.
                                                                                                                                                                                                                                                                                                                                           Score 109; DB 1; Length 2812;
Pred. No. 0.00053;
                                                                                                                                                                                                                                                                                                                                                                      13; Indels
                                                                                                                                                                                                                                                                                    (In isoform 1).
                (in isoform 7).
                                                                                                                                                                                                                                                                        001430.
                                                                                                                                                                                                                                                                                                   001431.
                                                                                                                            FTIG=VSP 001428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
LGSS -> VRAGSRRP
AGQQ (in isoform
/FTId=VSP_001427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT; 2476 AA
                                                                                                                                                                                                                                                                                                                                                                         11; Mismatches
                                                                                                                                                                                                                                                                                   Missing (i)
                                                                                                                                                                                                                                                                        FTIG=VSP
                                                                                                                                                                                                                                                                                                                                           27.9%;
                                                                                                                                                                                                                                                                                                                                                                         24; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                            2812
                                                                                                                                                                                                                                                                                                                430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2261 CVPRSQCG 2268
  2666
                                            2689
                                                                                                                                                                       2724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Zonadhesin precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            60 CVPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=9823;
                                                                                                                                            2690
                                                                                                                                                                                                                                                                                      2725
                                                                                                                                                                                                                                                                                                                430
                                            2597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIGNALING
                                                                                                                                                                                                                                                                                      VARSPLIC
                                                                                                                                                                                                                                                                                                                CONFLICT
                                                                                                                                            VARSPLIC
                                                                                                                                                                       VARSPLIC
                                                                                                                                                                                                                                                                                                                                             Query Match
  VARSPLIC
                                          VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ZAN PIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         028983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    factor
                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <del>!</del>:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZAN_PIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PT
                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb.sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                             2; 2.
Transmembrane; EGF-like domain; Cell adhesion;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      53 X HEPTAPEPTIDE REPEATS (APPROXIMATE)
SPERMATOZOA OR PROMOTING ADHESION TO THE OVIDUCTAL ISTHMUS. DOMAIN: THE VWFD DOMAINS 2 AND 3 MAY MEDIATE COVALENT OLIGOMERIZATION (BY SIMILARITY TO HUMAN INTESTINAL MUCIN MUC2). PTM: THE MAM DOMAINS AND THE MUCIN-LIKE DOMAINS ARE MISSING FROM THE ZONADHESIN THAY BINDS TO THE EGG EXTRACELLULAR MATRIX. PROCESSING MIGHT OCCUR DURING SPERM MATURATION AND/OR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ZONADHESIN.
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (MUCIN-LIKE DOMAIN).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (GLCNAC.
(GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EGF-LIKE.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCN)
                                                                          -!- SIMILARITY: Contains 2 MAM domains.
-!- SIMILARITY: Contains 5 VWFD domains.
-!- SIMILARITY: Contains 1 EGF-like domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VWFD 1. VWFD 2. VWFD 4. VWFD 5.
                                                                                                                                                                                                                                      InterPro; IPR006209; EGF like.
InterPro; IPR002098; MAM_domain.
InterPro; IPR002099; TIL_Cyarich.
InterPro; IPR003128; TILa Cyarich.
InterPro; IPR001007; VWF_C.
InterPro; IPR001007; VWF_C.
InterPro; IPR001846; VWF_D.
Pfam; PF00629; MAM; 2.
Pfam; PF01826; TIL; 5.
                                                                                                                                                                                                       EMBL; U40024; AAC48486.1; -.
PIR; T34022; T34022.
HSSP; P56682; 1CCV.
                                                                                                                                                                                                                                                                                                                                      Pfam; PF02345; TILa; 5.
Pfam; PF00094; vwd; 4.
SMART; SM00137; MAM; 1.
SMART; SM00214; VWC; 2.
SMART; SM00216; VWD; 4.
PROSITE; PS00102; EGF 1; 1.
PROSITE; PS01186; EGF 2; 1.
PROSITE; PS00146; MAM 1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2370
2402
2381
2390
2401
109
269
735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2476
2418
2439
2476
                                                                                                                                                                                                                                                                                                                                                                                                                                       Signal; Glycoprotein; Repeat. 1 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1184
                                                                  CAPACITATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1574
1969
2366
2370
2375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1544
1596
1654
1843
1965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CHAIN
DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
              +
                                 +
```

```
8
                  셤
                                                                                                                    ب
ب
                                                                                                                                                  1455 KCPSGSSXSTCANPCPATCLSLNNPSYCPSTLP-----CAEGCECQKGHILSGTS-CV 1506
                                                                                                                                       61
                                                                                                                                      11 KCPSNEIFSRCDGRC-----QRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCV
                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                     Neoptera; Endopterygota; Hymenoptera; Apocrita; Aculeata; Apoidea;
Apidae; Apis.
          (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
C -> V (IN REF. 1; AA SEQUENCE).
S -> Y (IN REF. 1; AA SEQUENCE).
W -> Y (IN REF. 1; AA SEQUENCE).
W -> Y (IN REF. 1; AA SEQUENCE).
S -> K (IN REF. 1; AA SEQUENCE).
S -> K (IN REF. 1; AA SEQUENCE).
S -> K (IN REF. 1; AA SEQUENCE).
                                                                                                                     17;
                                                                                                  DB 1; Length 2476;
                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 1; Length 56;
                                                                                                                     18; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               092B2815AE6B2B7F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26.7%; Score 104.5; DB 1;
36.8%; Pred. No. 5.8e-05;
iive 7; Mismatches 26;
                                                                                                 27.5%; Score 107.5; DB 1
33.3%; Pred. No. 0.00068;
iive 9; Mismatches 18
                                                                                                                                                                                                                                                     15-JUL-1999 (Rel. 38, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
15-SFD-2003 (Rel. 42, Last annotation update)
17-SFD-2003 (Rel. 42, Last annotation update)
Apis mellifera (Honeybee).
                                                                                                                                                                                                                                       56 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Serine protease inhibitor; 3D-structure.
                                                                                                                                                                                                                                                                                                                                                SEQUENCE, AND STRUCTURE BY NMR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5973 MW;
                                                                                 270364
                                                                                                                     Conservative
                                                                                                                                                                                                                                       STANDARD;
                   2178
2329
2359
823
923
965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Æ.
                                                                                                                                                                                         1507 PLSQCG 1512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity
Matches 21; Conserv
                                                                                                          l Similarity
22; Conserv
                                                                                                                                                                        PRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      53
56 AA;
                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=7460;
 2122
2165
2178
2329
2359
823
923
1241
                                                                                                                                                                                                                                     AMCI APIME
P56682;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                           CARBOHYD
CARBOHYD
CONFLICT
CONFLICT
CONFLICT
CONFLICT
SEQUENCE
          CARBOHYD
CARBOHYD
                                                                                                                                                                         62
                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
CARBOHYD
                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                              AMCI_APIME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TURN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TURN
                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                                      g
 à
                                                                                                                                                                         ð
                                                                                                                                                                                         g
```

2

Gaps

3,

Indels

Conservative

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
               11 KCPSNEIFSRCDGRCQRFCPNVVPKP-LCIKICAPGCVCRLGYLRNKKVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                             Venta P.J., Li J., Yuzbasiyan-Gurkan V., Brewer G.J., Schall W.D., "Complete sequence of the structural gene for canine von Willebrand factor and identification of a mutation causing Scottish terrier von
                                                                                                                                                                                                                                                                         Shibuya H., Nonneman D.J., Holzhauer J., Mohammed I.H.,
                                                                                                                                                                                                     Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Carnivora, Fissipedia, Canidae, Canis
                                                                                                                                                                                                                                                                                                                                           Montgomery R.R., Fahs S., Montgomery M.W.;
Submitted (AUG-1996) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (OCT-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                    Submitted (AUG-1996) to the EMBL/GenBank/DDBJ databases
                                                                                            VWF CANFA STANDARD; PRT; 2813 AA. Q28295; Q28311; Q97S14; 
Q18295; Q28311; Q97S14; 
16-OCT-2001 (Rel. 35, Created) 
28-FRB-2003 (Rel. 40, Last sequence update) 
28-FRB-2003 (Rel. 41, Last annotation update) 
VWF OR Willebrand factor precursor (VWF).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          or send an email to license@isb-sib.ch>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Interpro; IPR006208; Cys_knot.
Interpro; IPR006207; Cys_knot_C.
Interpro; IPR000004; SapB.
Interpro; IPR002919; TiL_Cysrich.
Interpro; IPR002035; WWF_A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE OF 1234-1669 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; AF099154; AAD04919.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; L76227; AAB05549.1; -.
EMBL; L16903; AAA30903.1; -.
                                                                                                                                                                                        Canis familiaris (Dog).
                                                                                                                                                                                                                                                                                                                                                                                                                                         Willebrand's disease.
                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HSSP; P04275; 1AUQ.
                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                               NCBI_TaxID=9615;
                                                                                                                                                                                                                                                                          Stoy S.J., Sh:
Johnson G.S.;
                                                                 RESULT 5
```

us-09-506-978-1.open.rsp

```
GECAL----SCPQGQVYLQCGTPCNMTCRSLSYPEEDCNEVCLEGCFCPPGLYLDERGDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GFGGLGGRGKCPSNEIPSRCDGRCQRFCPNV-VPKPLCIKICAPGCVCRLGYLRNKKKVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=96144290; PubMed=8566794;
Janel N., Schwachtgen J.L., Bakhshi M.R., Barek L., Meyer D.,
Kerbiriou-Nabias D.,
"Comparison of the 5'-flanking sequences of the human and bovine von Willebrand factor-encoding genes reveals alternation of highly homologous domains with species-specific Alu-type repeats.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
MEDLINE=97307751; PubMed=9165093;
Janel N., Ribba A.S., Cherel G., Kerbiriou-Nabias D., Meyer D.;
"Primary structure of the propeptide and factor VIII-binding domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PARTIAL SEQUENCE.

**BEDLINE-91192039; PubMed=1707363;

Fujisawa T., Takagi J., Sekiya F., Goto A., Miake F., Saito Y.;

"Monoclonal antibodies that inhibit binding of propolypeptide of
"Millebrand factor to collagen. Localization of epitopes.";

Bur. J. Biochem. 196:673-677(1991).
          (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26.5%; Score 103.5; DB 1; Length 2813; 28.8%; Pred. No. 0.002; cive 15; Mismatches 27; Indels 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AA; 309716 MW; 5DF93E1E5E72F80C CRC64;
                                                                                                                                                                                                                                                                        N-LINKED
N-L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bovine von Willebrand factor.";
Biochim. Biophys. Acta 1339:4-8(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity ...
Les 19; Conservative
            994
1021
2381
2406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gene 167:291-295(1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ||:::|
702 VPKAQC 707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 VPRSKC 66
            857
115331
15331
222234
222234
222234
222234
222234
22223
22223
22323
23323
2406
2406
2406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2813
            CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                       CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                      CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                             CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 6
VWF BOVIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                            Extracellular matrix;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL). (POTENTIAL). (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E2...
WWFC 1.
WWFC 2.
WWFC 3.
CTCK.
CELL ATTACHMENT SITE (POT
CELL ATTACHMENT SITE (POT
CELL ATTACHMENT SITE (POT
CELL ATTACHMENT SITE (POT
BY SIMILARITY.
B
InterPro; IPR001007; VWF_C.
InterPro; IPR001846; VWF_D.
Pfam; PP00005; VWF_D.
Pfam; PP00092; VWA; 3.
Pfam; PP00092; VWA; 3.
Pfam; PP00094; VWA; 3.
PFAMINE; SW00216; VWA; 4.
PROSITE; PS01225; CTCK 2; 1.
PROSITE; PS01226; VWFA; 3.
PROSITE; PS01226; VWFA; 3.
PROSITE; PS01286; VWFA; 3.
PROMAIN 1297 1453 VWFA; 3.
POWAIN 1498 1665 VWFA; 3.
POWAIN 1591 1871 VWFA; 3.
POWAIN 1591 VWFA; 3.
POWAIN 1591 VWFA; 4.
POWAIN 1591 VWFA; 5.
POWAIN 1591 VWFA; 5.
POWAIN 1591 VWFA; 5.
POWAIN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
8833
8833
1013
11453
11453
11453
2326
2326
2326
2326
2336
233
233
808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   889
898
898
1001
1006
1008
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
11153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SITE
SITE
SITE
SITE
SITE
SITE
DISULPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
CARBOHYD
CARBOHYD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
DOMAIN
DOMAIN
DOMAIN
```

ñ

701 09

οŧ

von

~

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R EMBL; Y09353; CAA70525.1; -
R EMBL; U28147; AAA96953.1; -
R InterPro; IPR00207; Cys_knot_C.
R InterPro; IPR00207; VWF_C.
R InterPro; IPR001207; VWF_C.
R InterPro; IPR001204; VWF_D.
R Pfam; PF01826; TIL; 2.
R Pfam; PF01826; TIL; 2.
R SMART; SM00214; VWC; 1.
R SMART; SM00214; VWC; 1.
R PROSITE; PS01126; CTCK 1; PARTIAL.
R ROSITE; PS011208; VWFC_1; PARTIAL.
R PROSITE; PS01208; VWFC_1; PARTIAL.
R PROSITE; PROSITE; PARTIAL.
R PROSITE; PROSITE; PARTIAL.
R PROSITE; PROSITE; PARTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1; Gaps
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 26.0%; Score 101.5; DB 1; Length 937; Best Local Similarity 28.6%; Pred. No. 0.0013; Matches 16; Conservative 13; Mismatches 26; Indels 1;
                                                                                                                                                                                                                                                                                              -!- SUBUNIT: MULTIMERIC (BY SIMILARITY).
-!- PTH: ALL CYSTEINE RESIDUES ARE INVOLVED IN INTRACHAIN OR
INTERCHAIN DISULFIDE BONDS (BY SIMILARITY).
-!- SIMILARITY: CONTAINS at least 3 WMPD domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  102599 MW; 9BF4C94A254A5629 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WWED 3.

VWED 3.

FACTOR XIIIA-BINDING.

FACTOR XIIIA-BINDING.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

N-LINKED (GLCNAC. ...) (FN-LINKED 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BY SIMILARITY.
VON WILLEBRAND FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AMINO-TERMINAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VWFD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      330
523
528
538
937 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SITE
SITE
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CONFLICT
NON TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROPEP
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
```

CPSNEIFSRCDGRCQRFCPNVV-PKPLCIKICAPGCVCRLGYLRNKKVCVPRSKC 66

12

ઠે

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).

    binding.",
    Biol. Reprod. 65:1691-1700(2001).
    FUNCTION: BINDS IN A SPECIES-SPECIFIC MANNER TO THE ZONA PELLUCIDA OF THE EGG. MAY BE INVOLVED IN GAMETE RECOGNITION AND/OR SIGNALING (BY SIMILARITY).
    SIGNALING (BY SIMILARITY).

                                                                                                                                                                                                                                                                                                                                                                 -:- SUBUNIT: PROBABLY FORMS COVALENT OLIGOMERS (BY SIMILARITY).
-:- SUBCELLIAR LOCATION: TYPE I MEMBRANE PROTEIN, EXCLUSIVELY ON THE APICAL REGION OF THE SPERM HEAD (BY SIMILARITY).
-:- DOMAIN: THE WAM DOMAINS PROBABLY MEDIATE SPERM ADHESION TO THE
                                                                                                                                                                                                                                                                                                                                                                                                                             ZONA PELLUCIDA.

-!- DOMAIN: DURING SPERM MIGRATION THROUGH THE REPRODUCTIVE TRACTS, THE WUCIN-LIKE DOMAIN MIGHT INMIBIT INAPPROPRIATE TRAPPING OF SPERMATOZOA OR PROMOTING ADHESION TO THE OVIDICTAL ISTHMUS.
-!- DOMAIN: THE VWPD DOMAINS 2 AND 3 MAY MEDIATE COVALENT OLIGOMERIZATION (BY SIMILARITY TO HUMAN INTESTINAL MUCIN MUC2).
-!- SIMILARITY: COntains 1 least 2 MAM domains.
-!- SIMILARITY: Contains 5 VWPD domains.
                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
                                                                                                                                                                                                                                                 Lea I.A., Sivashanmugam P., O'Rand M.G.;
"Zonadhesin: characterization, localization, and zona pellucida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31ycoprotein; Transmembrane; EGF-like domain; Cell adhesion;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL.
CYTOPLASMIC (POTENTIAL).
                               (Rel. 40, Created)
(Rel. 41, Last sequence update)
(Rel. 42, Last annotation update)
 PRT; 2282 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; 1 PR006209; EGF 2.
InterPro; 1 PR006209; EGF 2.
InterPro; 1 PR006209; EGF 7.
InterPro; 1 PR0002919; MAM_Gomain.
InterPro; 1 PR001909; TILA_Cysrich.
InterPro; 1 PR00100146; VWF_D.
Pfam; PF00108; EGF; 1.
Pfam; PF001826; 1 1.
Pfam; PF001826; TILA; 5.
Pfam; PF001826; TILA; 5.
Pfam; PF001826; TILA; 5.
Pfam; PF00184; VWC; 2.
SWART; SW00114; VWC; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE; PS00022; EGF_1; 1.
PROSITE; PS01186; EGF_2; 4.
PROSITE; PS00740; MAM_1; FALSE_NEG.
PROSITE; PS50060; MAM_2; 2.
                                                                                                                                                                                                 SEQUENCE FROM N.A.
TISSUE=Testis;
MEDLINE=21573741; PubMed=11717130;
                                                                                                                 Oryctolagus cuniculus (Rabbit)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; AF244982; AAF63342.2; -.
HSSP; PS6682; 1CCV.
InterPro; IPR000742; EGF_2.
 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1
2235
2256
2282
                                                                                  Zonadhesin (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1
<1
2236
2257
                               16-OCT-2001
28-FEB-2003
                                                                 L5-SEP-2003
ZAN RABIT
P57<u>9</u>99;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Repeat.
NON TER
DOMAIN
TRANSMEM
DOMAIN
```

```
1266 KCPPNSSYSPCGSPCPGTCLSLNHPKDCPITLPCVEGCECQNGYILSGTS-CVPLNQCG 1323
                                                                                                                                                                                                                                                                                                                                                                                                                           11 KCPSNEIFSRCDGRCQRFCPNV-VPKPLCIKI-CAPGCVCRLGYLRNKKKVCVPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=CIRCLES, MEDGE 10731132;
MEDLINE=20196006; PubMed=10731132;
Medra M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
Brandon R.C., Rogers Y.H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
Abril J.F., Agbayani A., An H.-J., Andrews-Farnnkooh C., Baldwin D.,
Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
                                                                                                                                                                                                                                                                                                                                                                                                 3; Gaps
MAM 1.
MAM 2.
26 X HEPTAPEPTIDE REPEATS (APPROXIMATE)
(MUCIN-LIKE DOWAIN).
VWFD 1 (TRUNCATED).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A., FUNCTION, AND TISSUE SPECIFICITY.
STRAIN=Canton-S; TISSUE=Male accessory gland;
MEDLINE=S98135120. PubMed=9474779;
Wolfinger M.F., Harada H.A., Bertram M.J., Stelick T.J., Kraus K.W.,
Kalb J.M., Lung Y.O., Neubaum D.M., Park M., Tram U.K.;
"New genes for male accessory gland proteins in Drosophila
                                                                                                                                                                                             (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Accessory gland protein Acp62F precursor.

ACP62F OR CG1262.

Drosophila melanogaster (Fruit fly).

Bukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota, Neoptera, Endopterygota, Diptera, Brachycera, Enopterygota, Diptera, Brachycera; Muscomorpha, Ephydroidea, Drosophilidae, Drosophila.
                                                                                                                                                                                                                                                                                                                                                                       Score 98.5; DB 1; Length 2282;
Pred. No. 0.0059;
9; Mismatches 25; Indels 3;
                                                                                                                                                                                                                                                                                                                                              248290 MW; 380FA81093454892 CRC64;
                                                                                                                                                                   (GLCNAC. . (GLCNAC. . (GLCNAC. .
                                                                                                                                                                                                                                                                                          (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nsect_Biochem. Mol. Biol. 27:825-834(1997).
                                                                                                                              BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCN)
                                                                                                                                                                                               N-LINKED
N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                  N-LINKED
N-LINKED
N-LINKED
N-LINKED
N-LINKED
                                                                           VWFD 3.
VWFD 4.
VWFD 5.
EGF-LIKE.
                                                                                                                                                                                                                                                                                                                                   N-LINKED
                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 37.3%;
Matches 22; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                1355
1467
1483
1662
1997
2178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                         1141
1259
1270
1355
1467
1483
1662
1997
2282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           melanogaster.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A62F DROME
                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                           DISULFID
                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                 DISULFID
                                                                                                                                             DISULFID
                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                046202;
                                                                                                    DOMAIN
DOMAIN
DOMAIN
DOMAIN
                                                                                            DOMAIN
                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A62F_DROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
```

```
ÆDLINE=86269894; PubMed=3488076;
    RETTER SERVICE SERVICE
                                                                                                                     2
                                                                                                                                                             GGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKK-KVCVP 62
                                                                                                                                                                                  26 GWOGPKVDCTANGTOTECPVACPETCEYSGNGP-CVKWCGAPCVCKPGYVINERIPACVL 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 1-1400 FROM N.A.
MEDLINE=87004550; PubMed=3019665;
Verweij C.L., Diergaarde P.J., Hart M., Pannekoek H.;
"Full-length von Willebrand factor (vWF) cDNA encodes a highly repetitive protein considerably larger than the mature vWF subunit.";
EMBO J. 5:1839-1847(1986).
                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 1-120 FROM N.A., AND SEQUENCE OF 23-56.
TISSUB-Umbilical vein endothelial cells;
MEDLINE=8721353; PubMed=3495266;
Shelton-Inlose B.B., Broze G.J. Jr., Miletich J.P., Sadler J.E.;
"Evolution of human von Willebrand factor: cDNA sequence
polymorphisms, repeated domains, and relationship to von Willebrand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 764-2813.
MEDLINE=8626895; PubMed=3524673;
Titani K., Kumar S., Takio K., Ericsson L.H., Wade R.D., Ashida K.,
Walsh K.A., Chopek M.W., Sadler J.E., Fujikawa K.;
"Amino acid sequence of human von Willebrand factor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                        7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=87016349; PubMed=3489923;
Bonthron D., Orr E.C., Mitsock L.M., Ginsburg D., Handin R.I.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Nucleotide sequence of pre-pro-von Willebrand factor cDNA.";
Nucleic Acids Res. 14:7125-7128(1986).
ACCESSORY GLAND PROTEIN ACP62F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mancuso D.J., Tuley E.A., Westfield L.A., Worrall N.K., Shelton-Initoes B.B., Sorace J.M., Alevy Y.G., Sadler J.E.; Structure of the gene for human von Willebrand factor."; J. Biol. Chem. 264:19514-19527(1989).
                                                                             Length 115;
                                                                                                                     31; Indels
                                        4326AA6F6C32291D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Verweij C.L., Diergaarde P.J., Hart M., Pannekoek
EMBO J. 5:3074-3074(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            antigen II.";
Biochem. Biophys. Res. Commun. 144:657-665(1987).
                                                                           Score 98; DB 1; I
Fred. No. 0.00053;
9; Mismatches 31;
                                                                                                                                                                                                                                                                                                                                                                                                                  20-WAR-1987 (Rel. 04, Created)
01-JUL-1993 (Rel. 26, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
VWF OR FRVWF.
                                                                                                                                                                                                                                                                                                                                                                                        2813 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=90062044; PubMed=2584182;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         iochemistry 25:3171-3184(1986)
                                     12570 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 781-1424 FROM N.A.
                                                                                25.1%;
34.4%;
                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens (Human)
25 1
34
115 AA;
                                                                                            1 Similarity
22; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                           RSKC 66
                                                                                                                                                                                                                                                                                 RSDC 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                      VWF HUMAN P04275;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Orkin S.H.
CHAIN
DOMAIN
SEQUENCE
                                                                         Query Match
Best Local S
                                                                                                                                                                                                                                           63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ERRATUM.
                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                 VWF_HUMAN
                                                                                                                                                                                                                                                                                                                                                RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                         셤
FT
                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                ð
```

```
SECUENCE OF 990-1947 FROM N.A. MEDLINES-1105089; WENDLINES-1105089; PubMed=1988024; MEDLINES-1105089; PubMed=1988024; Mancuso D.J., Tuley B.A., Westfield L.A., Lester-Mancuso T.L., Le Beau M.M., Sorace J.M., Sadler J.E.; "Human von Willebrand factor gene and pseudogene: structural analysis and differentiation by polymerase chain reaction."; piochemistry 30:253-269(1991).
Shelton-Inloes B.B., Titani K., Sadler J.B.; "ONA sequences for human von Willebrand factor reveal five types of repeated domains and five possible protein sequence polymorphisms."; Biochemistry 25:3164-3171(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           region.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 2731-2813 FROM N.A.
MEDLINE=85269603; PubMed=3875078;
Verweil C.L., de Vries C.J.M., Distel B., van Zonneveld A.-J.,
Geurts van Kessel A., van Mourik J.A., Pannekoek H.;
"Construction of cDNA coding for human von Willebrand factor using antibody probes for colony-screening and mapping of the chromosomal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Marti T., Rosselet S.J., Titani K., Walsh K.A.;
"Identification of disulfide-bridged substructures within human von Willebrand factor.";
Biochemistry 26:8099-8109(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=85244588; PubMed=3874428; Ginsburg D., Handin R.I., Bonthron D.T., Donlon T.A., Bruns G.A.P., Latt S.A., Orkin S.H.; Human von Willebrand factor (vWF): isolation of complementary DNA (cDNA) clones and chromosomal localization.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Molecular cloning of the human gene for von Willebrand factor and identification of the transcription initiation site."; Proc. Natl. Acad. Sci. U.S.A. 84:4393-4397(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-85201687; PubMed-3873280;
Lynch D.C., Zimmerman T.S., Collins C.J., Brown M., Morin M.J.,
Ling E.H., Livingston D.M.;
"Molecular cloning of CDNA for human von Willebrand factor:
authentication by a new method.";
                                                                                                                                                                                                                                                                                                                                       "Cloning and characterization of two cDNAs coding for human von
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bonthron D., Orkin S.H.; "The human von Willebrand factor gene. Structure of the 5'
                                                                                                                                                                                                                             MEDLINE=86016708; PubMed=2864688;
Sadler J.E., Shelton-Inloes B.B., Sorace J.M., Harlan J.M.
Titani K., Davie E.W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Lynch D.C.;
Submitted (JUL-1991) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 2731-2813 FROM N.A.
MEDLINE=87260814; PubMed=3496594;
Collins C.J., Underedall J.P., Levene R.B., Ravera C.P.,
Morin M.J., Dombalagian M.J., Ricca G., Livingston D.M.,
                                                                                                                                                                                                                                                                                                                                                                                                          Proc. Natl. Acad. Sci. U.S.A. 82:6394-6398(1985)
                                                                                                                                                                                         SEQUENCE OF 764-873 AND 1289-2813 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nucleic Acids Res. 13:4699-4717(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 1-177 FROM N.A.
MEDLINE=88111704; PubMed=2828057;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=88163465; PubMed=3502076;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           J. Biochem. 171:51-57(1988)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE OF 2731-2813 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2621-2813 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Science 228:1401-1406(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           41:49-56(1985).
                                                                                                                                                                                                                                                                                                                                                                               Willebrand factor."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BONDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REVISIONS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ynch D.
```

'n

14; Gaps

Indels

27;

Length 2813;

DB 1;

25.1%; Score 98; DB 1; 26.0%; Pred. No. 0.008; ive 13; Mismatches

```
Query Match
Best Local Similarity Zo...
Local 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VWF_PIG
ID VWF
AC Q28
DT 16-(
                                                                                                                                                                                                                                                                    ð
                                                                                 ò
                                                                                                            엄
                                                                                                                                           ଧ
                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                    MEDLINE=97472999; PubMed=9331419;
Huizinga E.G., Martijn van der Plas R., Kroon J., Sixma J.J., Gros P.,
"Crystal structure of the A3 domain of human von Willebrand factor:
implications for collagen binding.";
Structure 5:1147-1156(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Randi A.M., Rabinowitz I., Mancuso D.J., Mannucci P.M., Sadler J.E., "Molecular basis of von Willebrand disease type IIB. Candidate mutations cluster in one disulfide loop between proposed platelet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=92001464; PubMed=1832934; Gaucher C., Mercier B., Jorieux S., Oufkir D., Mazurier C.; "Identification of two point mutations in the von Willebrand factor gene of three families with the 'Normandy' variant of von Willebrand
                                                                                                                                                                                                                                                                                                                                                                                               Bienkowska J., Cruz M., Atiemo A., Handin R., Liddington R.;
"The von Willebrand factor A3 domain does not contain a metal ion-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Donner M., Andersson A.-M., Kristoffersson A.-C., Nilsson I.M., Dahlback B., Holmberg L.;
"An Arg545-->Cys545 substitution mutation of the von Willebrand factor in type IIB von Willebrand's disease.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Warianr THR-1628.
MEDLINE=91196734; PubMed=1673047;
MEDLINE=91196734; PubMed=1673047;
Iannuzzi M.C., Hidaka N., Boehnke M., Bruck M.E., Hanna W.T.,
Collins F.S., Ginsburg D.;
"Analysis of the relationship of von Willebrand disease (vWD)
hereditary hemorrhagic telangiectasia and identification of a
potential type IIA vWD mutation (IIe865 to Thr).";
Am. J. Hum. Genet. 48:757-763(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-89264495; PubMed=2786201;
Ginsburg D., Konkle B.A., Gill J.C., Montgomery R.R.,
Bockenstedt P.L., Johnson T.A., Yang A.Y.;
"Molecular basis of human von Willebrand disease: analysis of
platelet von Willebrand factor mRNA.";
Proc. Natl. Acad. Sci. U.S.A. 86:3723-3727(1989).
                                                                                                                                                             MEDLINE=98221174; PubMed=9553097;
Emaley J., Cruz M., Handin R., Liddington R.;
"Crystal structure of the von Willebrand factor Al domain and
implications for the binding of platelet glycoprotein Ib.";
J. Biol. Chem. 273:10396-10401(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VARIANTS TRP-1306; CYS-1308; MET-1316; GLN-1341 AND HIS-1399.
                MEDLINE=86274702; PubMed=3089784; Samor B., Michalski J.C., Debray H., Mazurier C., Goudemand van Halbeek H., Vliegenthart J.F.G., Montreuil J.; "Frimary structure of a new tetraantennary glycan of the Nacetyllactosaminic type isolated from human factor VIII/von
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VARIANTS NORMANDY-2 TRP-816 AND NORMANDY-3 GLN-854.
                                                                                                                                                                                                                                                        X-RAY CRYSTALLOGRAPHY (1.8 ANGSTROMS) OF 1685-1873.
                                                                                                                                                                                                                                                                                                                                                                  X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS) OF 1686-1872.
                                                                                                                                               X-RAY CRYSTALLOGRAPHY (2.3 ANGSTROMS) OF 1261-1468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VARIANTS TRP-1306; CYS-1308 AND PRO-1613.
                                                                                                                                                                                                                                                                                                                                                                                                                                             Biol. Chem. 272:25162-25167(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              glycoprotein Ib binding sequences."; J., Clin. Invest. 87:1220-1226(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eur. J. Haematol. 47:342-345(1991).
                                                                                                                Eur. J. Biochem. 158:295-298(1986)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Br. J. Haematol. 78:506-514(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=91185601; PubMed=2010538;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=91185602; PubMed=1672694;
                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=97460108; PubMed=9312128;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=92104315; PubMed=1761120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VARIANTS TRP-1597 AND ASP-1607
                                                                                                                                                                                                                                                                                                                                                                                                                              dependent adhesion site motif.
      STRUCTURE OF CARBOHYDRATES MEDLINE=86274702; PubMed=3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VARIANT CYS-1308.
                                                                                                   Willebrand factor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            disease.";
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ä
                                     635 GRGVRVAWREPGRCELNCPKGQVYLQCGTPCNLTCRSLSYPDEECNEACLEGCFCPPGLY 694
  23
----KCPSNEIFSRCDGRCQRFCPNV-VPKPLCIKICAPGCVCRLGYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24 CGPNRVYKSCGTGCPETCEN--PDPDCDRACHQGCPCSKGLLQDIDGNCISPDKC 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12 CPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -!- SUBCELLULAR LOCATION: Secreted (Potential).
-!- SIMILARITY: Contains 1 TIL (Trypsin inhibitory-like) domain.
                                                                                                                                                                                                                                                                                                                                                        Eukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota, Neoptera, Endopterygota, Hymenoptera, Apocrita, Ichneumonoidea, Ichneumonidae, Pimplinae, Pimpla.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ..
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 77;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. 0.00048;
6; Mismatches 29; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CYSTEINE-RICH VENOM PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Parkinson N.M.;
Submitted (MAR-2002) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6889CB5F40D63DD6 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 97; DB 1;
Pred. No. 0.00048;
                                                                                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIMILARITY.
SIMILARITY.
SIMILARITY.
SIMILARITY.
SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q28833;
16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
                                                                                                                                                                                                                    77 A.A.
                                                                                                                                                                                                                                                                                (Rel. 42, Last sequence update) (Rel. 42, Last annotation update
                                                                                                                                                                                                                                                                                                                       Cysteine-rich venom protein 6 precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PEAN, PF01826, TIL Cysrich. Signal. Signal. Cysrich. Cysrich.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15-SEP-2003 (Rel. 42, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21
77
56
52
48
76
70
8184 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24.8%;
L Similarity 32.7%;
18; Conservative
                                                                                                       ::: |||:::|
695 MDERGDCVPKAQC 707
                                                                                99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                        STANDARD;
                                                                                54 RNKKKVCVPRSKC
                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=135724;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     77 AA;
                                                                                                                                                                                                                                                                                  15-SEP-2003
15-SEP-2003
                                                                                                                                                                                                                        PIMHY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VWF PIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 11
```

```
1640
11959
2026
2026
22215
22215
2254
2482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2393
2408
2419
2423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HMCT BOMMO
P98092;
01-FEB-1996
01-FEB-1996
                                                                                                                                                                                                            DISULFID
                                                                                                                                                                                                                                                                       DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                       DISULFID
                                                                                                                                                                                                                                                                                                                                                                                     DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
CARBOHYD
SEQUENCE
                                                                                                                                                                            DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                           DISULPID
                                                                                                                                                                                                                                                          DISULFID
                                                                                                                                                                                                                                                                                                                         DISULFID
                                                                                                                                                                                                                                                                                                                                            DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                     DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISULPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HMCT BOMMO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 12
    2445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                      MEDLINE-93356762; PubMed-8352759;
Lavergne JM., Piao Y.C., Ferreira V., Kerbiriou-Nabias D.,
Land rabbit von Willebrand factor, VIII binding domain of human, porcine
and rabbit von Willebrand factor, VIII binding domain of human, porcine
and rabbit von Willebrand factor, VIII binding Amenomy Nacronal Nature Maintarity.
Later Mancovalent Natheria Nature Contains Sayer Amenation Proceedings Amenatics.
Later Mancovalent Nature Contains 3 VWFC domains.
Later Mancovalent Nature Contains 1 VWFC domains.
Later Mancovalent Nature Nature Nature Nature CTCK) domain.
Later Mancovalent Nature Natur
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       # HSSP, W00205, 1A00205.

# HSSP, W00205, 1A00205.

# HSSP, W00205, 1A00205.

# InterPro; IPR006208; Cys knot.

# InterPro; IPR002001; TIL_Cysrīch.

# InterPro; IPR001001; VWF_C.

# InterPro; IPR001007; VWF_C.

# InterPro; IPR001007; VWF_C.

# Pfam; PF00002; Vwa; 3.

# Pfam; PF00003; Vwa; 3.

# Pfam; PF000093; Vwa; 3.

# R Pfam; PF000094; Vwa; 3.

# R PRINT; SM00041; CT;

# R SMART; SM00141; CT;

# R SMART; SM00216; VWA; 3.

# R SMART; SM00216; VWA; 3.

# R PROSITE; PS01185; CTCK 1; 1.

# R PROSITE; PS01208; VWFA; 3.

# R PROSITE; PS01208; VWFC 1; 3.

# R PROSITE; PS01208; VWFC 2; 3.

# R PROSITE; PS01208; VWFC 2; 3.
                                                               Chordata, Craniata, Vertebrata, Buteleostomi,
Cetartiodactyla, Suina, Suidae, Sus.
                                                                                                                          SEQUENCE FROM N.A.
Seaman W.T., Read M.S., Bellinger D.A., Nichols T.C.,
Submitted (MAR-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BY SIMILARITY.
VON WILLEBRAND FACTOR.
28-FEB-2003 (Rel. 41, Last annotation update)
Von Willebrand factor precursor (VWF) (Fragment)
VWF OR FBVWF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AMINO-TERMINAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Plasma; Hemostasis; Repeat; Cell adhesion.
NON TER
1 1 BROPEP <1 437 BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WWFD 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; AF052036; AAC06229.1; -.
EMBL; S64541; AAB27829.2; -.
PIR; PN0563; PN0563.
                                            Sus scrofa (Pig).
Eukaryota; Metazoa; C.
Mammalia; Eutheria; C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
```

```
|| | ::::| | :: | | :: | 320 GFCAL----SCPPGGVYLQCGTPCNLTCRSLSYPDEECAEDCLEGCFCPPGLYLDGSGDC 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 GFGGLGGRGKCPSNEIFSRCDGRCQRFCPNV-VPKPLCIKICAPGCVCRLGYLRNKKKVC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23.4%; Score 91.5; DB 1; Length 2482; 28.8%; Pred. No. 0.036; tive 11; Mismatches 31; Indels 5.
                                                                                                                                                                                                                                                                                                                                                     CELL ATTACHMENT SITE (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1184 N-LINKED (GLCNAC...) (FOTENT...)
1184 N-LINKED (GLCNAC...) (FOTENT...)
1243 N-LINKED (GLCNAC...) (FOTENT...)
1892 N-LINKED (GLCNAC...) (FOTENT...)
1959 N-LINKED (GLCNAC...) (FOTENT...)
2026 N-LINKED (GLCNAC...) (FOTENT...)
2049 N-LINKED (GLCNAC...) (FOTENT...)
2215 N-LINKED (GLCNAC...) (FOTENT...)
2254 N-LINKED (GLCNAC...) (FOTENT...)
2459 N-LINKED (GLCNAC...) (FOTENT...)
2450 N-LINKED (GLCNAC...) (FOTENT...)
2450 N-LINKED (GLCNAC...) (FOTENT...)
2450 N-LINKED (GLCNAC...) (FOTENT...)
                                                                                                                                                                                                                                                                                                                                                                       BY SIMILARITY
BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (Rel. 33, Created)
(Rel. 33, Last sequence update)
VWFD 3.
VWFA 1.
VWFA 2.
VWFA 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       911
1128
1339
1541
11609
1754
1754
1754
1757
2443
2443
2473
2475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VPKAQC 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
tes 19; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 VPRSKC 66
```

```
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                     DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VARIANT
 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -!- INDUCTION: HEMAGGLUTINATION ACTIVITY IS INCREASED BY BACTERIAL OR VIRAL INTECTION AND INHIBITED BY D-MANNOSE, N-ACETYL-D-GALACTOSANINE AND D-MALTOSE.
-!- PTM: MAY BE CONVERTED INTO THE 260 kDa MATURE HEMOCYTIN BY PROTEOLYSIS.
-!- SIMILARITY: TO MAMMALIAN VON WILLEBRAND FACTOR.
-!- SIMILARITY: THE N-TERMINAL DOMAIN SHOWS SOME SIMILARITY TO THAT OF HUMAN WICHN 2.
-!- SIMILARITY: CONTAINS 2 FEVY C domains.
-!- SIMILARITY: CONTAINS 2 VWFC domains.
-!- SIMILARITY: CONTAINS 1 C-terminal cystine knot-like (CTCK) domain.
                 Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Epidoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia; Bombycoidea; McBI_TaxID=7091;
                                                                                                                                                                                                Kotani E., Yamakawa M., Ilamoto S., I., Tashiro M., Mori H., Sumida M., Matsubara F., Taniai K., Kadono-Okuda K., Kato Y., Mori H.; "Cloning and expression of the gene of hemocytin, an insect humoral lectin which is homologous with the mammalian von Willebrand factor.";
                                                                                                                                                                                                                                                                                                                                                       Kotani E., Iwamoto S.I., Tashiro M., Mori H., Sumida M.,
Matsubara F., Yamakawa M.;
Submitted (JAN-1993) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: ADHESIVE PROTEIN ADD RELATES TO HEMOSTASIS OR
ENCAPSULATION OF POREIGN SUBSTRANCES FOR SELF-DEFENSE.
-!- DEVELOPMENTAL STAGE: EXPRESSED IN HEMOCYTES DURING LARVAL-PUPAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-5EP-2003 (Rel. 42, Last annotation update)
Hemocytin precursor (Humoral lectin).
Bombyx mori (Silk moth).
                                                                                                                                                                                                                                                                                                      Biochim. Biophys. Acta 1260:245-258(1995).
                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN=Fuyou X Tokai, TISSUE=Hemocyte;
MEDLINE=95178544; PubMed=7873598;
                                                                                                                                                                                                                                                                                                                           [2]
SEQUENCE OF 2221-3133 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            METAMORPHOSIS.
FITA BRARE REPRESENTATION OF THE FIRST STREET FOR T
```

```
3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       :|| |:: | :| | : | : | : | : | | : | | | : | | | | | : | | | | | : | : | | | | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11 KCPSNEIFSRCDGRCQRFCPN----VVPKPLCI-KICAPGCV------CRLGYLRNKK 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11; Mismatches 26; Indels 13; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23.1%; Score 90.5; DB 1; Length 3133; 27.5%; Pred. No. 0.056;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          247 247 N. LINKED (GLCNAC. . . ) (FOTENTI 2647 2647 2647 N. LINKED (GLCNAC. . . ) (FOTENTI 2654 2654 N. LINKED (GLCNAC. . ) (FOTENTI 2653 2663 N. LINKED (GLCNAC. . ) (FOTENTI 2794 2794 N. LINKED (GLCNAC. . ) (FOTENTI 2810 2810 N. LINKED (GLCNAC. . ) (FOTENTI 2865 2865 N. LINKED (GLCNAC. . ) (FOTENTI 2929 2929 N. LINKED (GLCNAC. . ) (FOTENTI 2964 2964 N. LINKED (GLCNAC. . ) (FOTENTI 2868 1288 N. LINKED (GLCNAC. . ) (FOTENTI 2868 1288 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 1288 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 1288 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 1288 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 1288 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 1305 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 1305 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 1305 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 1305 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 1305 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 1305 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. . ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. ) (FOTENTI 2868 R. -> G. N. LINKED (GLCNAC. ) (FOTENTI 2868 R. -> G. N.
                                                                                                                                                                                                C-TYPE LECTIN (ATYPICAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (GLCNAC.
(GLCNAC.
(GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (GLCNAC.
(GLCNAC.
(GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (GLCNAC.
(GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT; 1700 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BY SIMILARITY.
                                                     F5/8 TYPE C
F5/8 TYPE C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                             POLY-GLU.
POLY-THR.
POLY-THR.
POLY-SER.
POLY-SER.
POLY-PRO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                            VWFC 1.
VWFC 2.
CTCK.
POLY-THR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POLY-PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                       2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       : |||
RTCVPVKDC 837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    58 KVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                151
237
564
1170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1387
1622
1727
1847
1975
1985
2093
2113
22161
940
1116
2981
2991
3004
3020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 13
BAR3_CHITE
ID BAR3_CHITE
AC Q03376;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
DOMAIN
DOMAIN
DOMAIN
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VARIANT
SEQUENCE
```

```
CHAIN
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REPEAT
REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REPEAT
  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lab-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                    9:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1234 CPGNQIW--CDNTCRCVCPKNMEKPADNCKTKWWNDEMCQCVCKPGCPEGGCK-GVMKWN 1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12 CPSNEIFSRCDGRCQRFCPNVVPKP------LCIKICAPGCV---CRLGYLRNK 56
                                                                                                             Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                   26;
                                                         Eukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota,
Neoptera, Endopterygota, Diptera, Nematocera, Chironomoidea,
Chironomidae, Chironominae, Chironomus.
                                                                                                                                                                                                                                                                                                                                                                                                                                22.0%; Score 86; DB 1; Length 1700; 29.1%; Pred. No. 0.1; ive 9; Mismatches 21; Indels
                                                                                                                                                                                                                             TISSUE SPECIFICITY: SALIVARY GLAND.
DOMAIN: HAS 82 APPROXIMATE REPEATS OF CYS-X-CYS-X-CYS.
                                                                                                                                                                                                                                                                                                                                                                                                      CHAIN 21 1700 BALBIANI RING PROTEIN 3. SEQUENCE 1700 AA; 186145 MW; 34202B28521B0815 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Mucin 2 precursor (Intestinal mucin 2) (Fragment).
01-0CT-1993 (Rel. 27, Created)
01-0CT-1993 (Rel. 27, Last sequence update)
16-0CT-2001 (Rel. 40, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT; 1513 AA
                                                                                                                                                                                                                                                                                                                                                                                             POTENTIAL.
                                                                                                                                                                                                                                                                                                                                  EMBL, X52263; CAA36506.1; -.
PIR, S08167; S08167.
HSSP, P15358; 15K2.
InterPro; IPR004153; CXCXC_repeat.
Pfam; PF03128; CXCXC, 71.
                                                                                                                                                                                                                     SUBCELLULAR LOCATION: Secreted
                            Balbiani ring protein 3 precursor,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1291 ANTCSCECPADKAKPASCG 1309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         57 KKVC---VPRSK----CG
                                                 Chironomus tentans (Midge)
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=10116;
                                                                                    NCBI_TaxID=7153;
                                                                                                                                                                                                                                                                                                                                                                                    Repeat; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MUC2 RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. The European Bioinformatics Institute. The European Droffit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to licenseaisb-sib.ch).
                                                                                                                                                                           TISSUB-Intestinal epithelium;
MEDLINE-98180965; PubMed-9512496;
Kharri I.A., Forstner G.G., Forstner J.F.;
"Susceptibility of the cysteine-rich N-terminal and C-terminal ends of
                                                                                                                                                                                                                                                                                                    2 mucin
TISSUE=Intestine;
BEDILINE-2499489; PubMed=8027037;
Ohmori H., Dohrman A.F., Gallup M., Tsuda T., Kai H., Gum J.R. Jr.,
Kim Y.S., Babbaum C.B.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (POTENTIAL) .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL)
                                                                    "Molecular cloning of the amino-terminal region of a rat MUC ;
gene homologue. Evidence for expression in both intestine and
                                                                                                                                                                                                                                                  rat intestinal mucin Muc 2 to proteolytic cleavage.",
Biochem. J. 331:323-330(1998).
-!- FUNCTION: Coats the epithelia of the intestines, airways,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VWFD 2.
VWFD 3.
APPROXIMATE REPEATS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-LINKED
N-LINKED
N-LINKED
N-LINKED
N-LINKED
N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MUCIN 2.
VWFD 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROSITE; PS01208; WWFC_1; FALSE_NEG.
PROSITE; PS50184; WWFC_2; FALSE_NEG.
Signal; Repeat; Glycoprotein. POTENTI!
                                                                                                                         J. Biol. Chem. 269:17833-17840(1994)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; U07615; AAA21655.2; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIR, A54895, A54895.
InterPro, IPR001007; VWF.C.
InterPro, IPR001846; VWF.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam, PF01826; TIL, 1.
Pfam, PF00094; vwd, 3.
SMART; SM00214; VWC, 1.
SMART; SMO0216; VWD; 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20
>1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1407
1423
1434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1467
                                                                                                                                                            SEQUENCE OF 21-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
```

```
TURN
TURN
STRAND
STRAND
STRAND
TURN
STRAND
STRAND
STRAND
STRAND
HELIX
                                                                                                                                                                             TURN
                                                                                                                                                                 STRAND
                                                                                                                                                                                                                                                                                    Matches
 ò
                                                                                                                                                                                                                                                                                                                                              음
                                                                                                                                                                                                                                                                                                                                                                             ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                       7
                                                                                                                                                      12 CPSNEIFSRCDGRCQRFCPNVVPKPL-CIKICAP--GCVCRLGYLRNKKVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
MEDLINE=98297373; PubMed=9635450;
Lu C.C., Nguyen T., Morris S., Hill D., Sakanari J.A.;
"Anisakis simplex: mutational bursts in the reactive site centers of serine procease inhibitors from an ascarid nematode.";
Exp. Parasitol. 89:257-261(1998).
                                                                                                                                                                                                                                  TICEL ASCSU STANDARD; PRT; 63 AA.
P07851; 077419;
01-A0G-1988 (Rel. 08, Created)
15-SEP-2003 (Rel. 08, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
Chymotrypsin/elastase isoinhibitor 1 (C/E-1 inhibitor) (AsC/E-1).
Ascaris suum (Pig roundworm) (Ascaris lumbricoides).
Bukaryota: Metazoa; Nematoda; Chromadorea; Ascarididae; Ascarididae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Huang K., Strynadka N.C., Bernard V.D., Peanasky R.J., James M.N.,
"The molecular structure of the complex of Ascaris
chymotrypsin/elastase inhibitor with porcine elastase.";
Structure 2:679-689(1994).
-!- FUNCTION: Defend the organism against the host's proteinases.
-!- SUBCELLULAR LOCATION: Secreted.
-!- SIMILARITY: Contains 1 TIL (Trypsin inhibitory-like) domain.
                                                                                                       3;
N-LINKED (GLCNAC. . .) (POTENTIAL)
N-LINKED (GLCNAC. . .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     X-RAY CRYSTALLOGRAPHY (2.4 ANGSTROMS) OF COMPLEX WITH ELASTASE. MEDLINE-95006335; PubMed=7922044;
                                                                      21.6%; Score 84.5; DB 1; Length 1513;
.larity 37.9%; Pred. No. 0.13;
Conservative 8; Mismatches 25; Indels 3
                                                                                                                                                                                                                                                                                                                                                                                                                                      Babin D.R., Peanásky R.J., Goos S.M.;
"The isoinhibitors of chymotrypsin/elastase from Ascaris
Unmbricoides: the primary structure.",
Arch. Blochem. Biophys. 232:143:161(1984).
 1243 1243 N-LINKED (GLCNAC. . .) (POT) 1350 N-LINKED (GLCNAC. . .) (POT) 1351 1513 1513 1513 Aa, 166036 MW; 26109DCAIBETD008 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S -> R (IN REF. 2).
PD -> DP (IN REF. 2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR002919; TLL Cysrich.
Pfam; PF01826; TLL; 1.
Serine protease inhibitor; 3D-structure.
DOMAIN 5 60 TLL.
                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE.
MEDLINE=84255715; PubMed=6564898;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; U94499; AAC61300.1; -. PDB; 1EAI; 05-APR-99.
                                                                                  Local Similarity
nes 22; Conserv
                                                                                                                                                                                                                                                                                                                                                                            NCBI TaxID=6253;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DISULPID
ACT SITE
CONFLICT
CONFLICT
                             NON TER
SEQUENCE
                 CARBOHYD
                                                                         Query Match
 CARBOHYD
                                                                                       Best Loca
Matches
                                                                                                                                                                                                           RESULT 15
                                                                                                                                                                                                                                                          FFFS
                                                                                                                                                               Db
```

```
4,
                                                                                                                                                         8 GRGKCPSNEIFSRCDG---RC----QRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKVC 60
                                                                                                                                                                       54
                                                                                                                                                                 Gaps
                                                                                                                                           13;
                                                                                                                          20.6%; Score 80.5; DB 1; Length 63; 30.3%; Pred. No. 0.024; ive 10; Mismatches 23; Indels
                                                                                                             6862 MW; 5DC10DE75B375F16 CRC64;
                                                                                                                                                                                                                          completed: November 17, 2003, 08:08:30
                                                                                                                                          20; Conservative
Query Match
Best Local Similarity
                                                                                                                                                                                       61 VPRSKC 66
                                                                                                                                                                                               :| |:|
55 IPASQC 60
Search completed: lob time: 12 secs
                                                                                                     HELIX
SEQUENCE
```

```
Q8cg65 mus musculu
Q8ms66 glossina mo
P99956 caenorhabdi
Q8icq5 anopheles s
Q9vu94 drosophila
Q91540 drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q814b8 caenorhabdi
Q9ult6 caenorhabdi
Q814b9 caenorhabdi
Q9ult5 caenorhabdi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q8ciz8 mus musculu
008523 mus musculu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q99nd0 mus musculu
O16488 caenorhabdi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q19964 caenorhabdi
                                                                                      (without alignments)
493.986 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                         US-09-506-978-1
391
1 GGFGGLGGRGKCPSNEIFSR......CRLGYLRNKKKVCVPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Description
                                                                         November 17, 2003, 08:06:07 ; Search time 35 Seconds
                                                                                                                                                                                                                                       830525
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                               830525 seqs, 258052604 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 08
Maximum Match 1008
Listing first 45 summaries
                                                OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q19964
Q814B8
Q9U1T6
Q814B9
Q9U1T5
Q8CIZ8
O08523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       O16488
Q8CG65
Q8MX86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           00N660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q816Q5
Q9VU94
Q9U5D0
Q75443
                                                                                                                                                                         BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P90956
                                                                                                                                                                                                                                                                                                                                                                                        sp_fungi:*
sp_human:*
sp_invertebrate:*
sp_mammal:*
sp_mo,*
sp_ncganalle:*
sp_phage:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sp_unclassified:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sp_rodent:*
sp_virus:*
sp_vertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                                                                                                                                                  SPTREMBL 23:*
1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
                                                                                                                                                                                                                                                              seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sp_plant:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        166
4998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3843
3843
2155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     :01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      118
116.5
113
111.5
111.1
111
109.5
108
108
                                                                                                                          Title:
Perfect score:
                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                             Minimum DB 8
Maximum DB 8
                                                                                                                                                                                                                                                                                                                                                     Database :
                                                                                                                                                    Sequence:
                                                                                                                                                                                                               Searched:
                                                                          Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š.
```

Q9y6r7 homo sapien Q8k0p6 mus musculu Q18157 caenorhabdi Q9u1u0 caenorhabdi O95784 homo sapien Q16938 ancylostoma	40 OF	QBaxc2 xenopus lae QBaxc2 xenopus lae QQ1471 caenorhabdi QQxwV6 bos taurus QBxpm4 dosophala Q9ypc8 drosophila Q9ypc8 drosophila Q9ypc8 drosophila Q9ypc9 drosophila Q9ypc9 drosophila Q9ypc9 drosophila Q9ypc9 drosophila Q9ypc9 drosophila Q9xyyy drosophila Q8xyyy homo sapien
Q9Y6R7 Q8K0P6 Q18157 Q9U1U0 095784	Q21248 Q21248 Q21248 Q9GFC4 Q9YH85 Q9YH85 Q25431 Q97378 Q8AXC0 Q98UI9	284152 Q84XC2 Q84XC2 Q01471 Q81SPM4 Q81SPM4 Q18805 Q45764 Q9VUU7 Q9GEC8 Q9GEC8 Q5GEC8 Q5GEC8 Q5GEC8 Q5GEC8 Q5GEC8 Q5GEC8 Q5GEC8 Q5GEC8 Q5GEC8
4472743	23 23 23 23 24 25 26 26 26 26 26 26 26 26 26 26 26 26 26	აപ ი ი ი ი ი ი ი ი ი ი ი ი 4 4 4 წ
2843 1205 137 620 735	140 140 221 2120 -77 505 1036 2108	11000000000000000000000000000000000000
25.7 25.7 25.7 25.7 25.7 25.7	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4462424242444 4466666666666666666666666
106.5 100.5 100.5 100.5	99 99 99 99 99 99 99 99 99 99 99 99 99	9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
17 198 20 21 22	1 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	, w w w w w w w w d d d d d d w w d n o c c c c c c c c c c c c c c c c c c

ALIGNMENTS

RESULT 1

```
Query Match 34.0%; Score 133; DB 5; Length 245;
Best Local Similarity 43.1%; Pred. No. 5.9e-09;
Matches 28; Conservative 7; Mismatches 20; Indels 10; Gaps
                                                                                                 Bukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                             "Genome sequence of the nematode C.elegans: A platform for investigating biology."; Science 282:2012-2018(1998).
                                                                                                                                                                                       Wilkinson J.; Submitted (JUN-1996) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                  WormPep; F32D8.3; CE05782.
InterPro; IPR006209; EGF like.
InterPro; IPR002919; TIL_Cysrich.
PROSTE; PS01186; EGF 2; 1.
SEQUENCE 245 AA; 27785 MW; 781AEA77F9FE784C CRC64;
                                             Last sequence update)
Last annotation update)
   245 AA
                            01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last seq
01-MAR-2003 (TrEMBLrel. 23, Last ann
P32D8-3 protein.
   PRT;
                                                                                                                                                                                                                                                  MEDLINE=99069613; PubMed=9851916;
                                                                                                                                                                                                                                                                                                                       EMBL; Z74031; CAA98455.1; -. HSSP; P56682; 1CCV.
   PRELIMINARY;
                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
Q19964
Q19964;
                                                                                       F32D8.3
```

4; 61

6 LGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKVCV----

8

-

5

```
99 CPVNEVSNECHNPCTEKKCPQKNAPQVNCLMACQVGCSCMDGFVRNNQGVCVKEAEC 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99 CPVNEVSNECHNPCTEKKCPQKNAPQVNCLMACQVGCSCMDGFVRNNQGVCVKEAEC 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12 CPSNEIFSRCDGRC-QRFCPNV-VPKPLCIXICAPGCVCRLGYLRNKKKVCVPRSKC 66
                                                                 12 CPSNEIFSRCDGRC-QRFCPNV-VPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Caenorhabditis elegans.
Bukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2; Gaps
                        ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 731;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for
  36.8%; Pred. No. 9.9e-07; ative 11; Mismatches 23; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      McMurray A.A.;
Submitted (AUG-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            McMurray A.A.;
Submitted (AUG-1997) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Genome sequence of the nematode C.elegans: A platform investigating biology.";
Science 282:2012-2018(1998).
EMBL, Z98977; CDB5616.1; -.
Hypothetical protein.
SEQUENCE 731 AA; 77752 MW; FC23E1075646733E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Genome sequence of the nematode C.elegans: A platform
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            investigating biology.";
Science 282:2012-2018(1998).
EMBL: 298877; CABS4473.2; -.
Hypotherical protein.
SEQUENCE 796 AA; 84881 NW; 5945C60C014623D0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-WAY-2000 (TrEMBLrel. 13, Created)
01-WAR-2003 (TrEMBLrel. 23, Last sequence update)
01-WAR-2003 (TrEMBLrel. 23, Last annotation update)
Hypotherical protein Y69H2.3b.
                                                                                                                                                                                                                                                            (TrEMBLrel. 23, Created)
(TrEMBLrel. 23, Last sequence update)
(TrEMBLrel. 23, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30.2%; Score 118; DB 5;
36.8%; Pred. No. 1.3e-06;
live 11; Mismatches 23
                                                                                                                                                                                                                     731 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     796 A.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=99069613; PubMed=9851916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
MEDLINE=99069613; PubMed=9851916;
                                                                                                                                                                                                                                                                              01-WAR-2003 (TrEMBLrel, 23, La
01-WAR-2003 (TrEMBLrel, 23, La
Hypothetical protein Y69H2.3c.
Y69H2.3C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21; Conservative
                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                       Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     [2]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=6239;
                                                                                                                                                                                                                                          Q814B9;
01-MAR-2003
                           21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          McMurray
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESC.
Q9UITS
Q9UITS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09U1T5;
                                                                                                                                                                                                                   Q814B9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                        Matches
                                                                                                                                                                     RESULT 4
Q814B9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 5
                                                                                                        g
                                                                                                                                                                                                                       SO OCC COLOR REPRENTANT SO OCC COLOR REPRENTANT REPRENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
  57 INGEENCPMFQSFSHC--ACESTCNN--PDPYCSK-CEPGCTCRNGFVRNSLKLCVLPEE 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99 CPVNEVSNECHNPCTEKKCPQKNAPQVNCLMACQVGCSCMDGFVRNNQGVCVKEAEC 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12 CPSNEIFSRCDGRC-QRFCPNV-VPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                Caenorhabditis elegans.
Eukaryota, Metazoa, Nematoda, Chromadorea, Rhabditida, Rhabditoidea,
Rhabditidae, Peloderinae, Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 537;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 432;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'Genome sequence of the nematode C.elegans: A platform for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        McMurray A.A.;
Submitted (AUG-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    McMurray A.A.;
Submitted (AUG-1997) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genome sequence of the nematode C.elegans: A platform
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           F4C99F0221709D67 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                58089 MW; 96F837138278D168 CRC64;
                                                                                                                                                                                                                                       01-MAR-2003 (TrEMBLrel. 23, Created)
01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
Hypothetical protein Y69H2.3d.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-MAR-2003 (TrEMBLrel. 23, Last sequence update) 01-MAR-2003 (TrEMBLrel. 23, Last annotation update) Hypothetical protein X69H2.3a.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30.2%; Score 118; DB 5; 36.8%; Pred. No. 8.1e-07; tive 11; Mismatches 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 5;
                                                                                                                                                                                                   AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   537 AA
                                                                                                                                                                                                   432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30.2%; Score 118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-MAY-2000 (TrEMBLrel. 13, Created)
                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
MEDLINE=99069613; PubMed=9851916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=99069613; PubMed=9851916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     investigating biology.";
Science 282:2012-2018 (1998).
EMBL, Z98877; CADS6617.1; -.
Hypochetical protein.
SEQUENCE 432 AA; 46710 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       investigating biology.";
Science 283:2012-2018(1998).
EMBL: 298877; CABS4472.2; -.
Hypothetical protein.
SEQUENCE 537 AA; 58089 MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity 36.8
nes 21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Caenorhabditis elegans.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A. McMurray A.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                    112 CPRTK 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                             62 -PRSK 65
                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=6239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                   Q814B8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9T1U60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   none;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                        RESULT 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 3
                                                                                                                                                                            0814B8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9U1T6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
  g
                                             ð
                                                                                    qq
```

3

m

7

ð g

```
11 KCPSNEIPSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Wilson M.D., Riemer C., Martindale D.W., Schnupf P., Boright A.P., Cheung T.L., Hardy D.M., Schwartz S., Scherer S.W., Tsui L.-C., Miller W., Koop B.F., (Comparative analysis of the gene-dense ACHE/TFR2 region on human chromosome 7q22 with the orthologous region on mouse chromosome 5."; Nucleic Acids Res. 29:1352-1365 (2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cheung T.L., Wilson M.D., Koop B.F., Hardy D.M.; Genomic Basis of Inter- and Intra-species Variation in Zonadhesin Domain Structure."; Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases.

EMBL; AF112033; AAK28824.1; --
EMBL; AF112035; AAL04416.1; --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                         2;
                                                                                                                                                                                                                                                                                                                                28.9%; Score 113; DB 11; Length 2155; 38.6%; Pred. No. 1.5e-05;
                                                                                                                                                                                              SMART; SM00241; ZP; 1.

PROSITE; PS00070; ALDEHYDE_DEHYDR_CYS; 1.

PROSITE; PS01186; EGF 2; 3.

PROSITE; PS01086; EA5EC 2; 1.

PROSITE; PS00682; ZP DOWAIN; 1.

SEQUENCE 2155 AA; 239535 MW; 86C5C09AA392B1C5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-UUN-2001 (TrEMBLrel. 17, Created)
01-UUN-2001 (TrEMBLrel. 17, Last sequence update)
01-UAN-2003 (TrEMBLrel. 23, Last annotation update)
ZAN (Zanadhesin).
                                                                                                                                                                                                                                                                                                                                                                       7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT; 5374 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MGDI, MGGILLOGOSO, LAGO
INTERPRO, IPRO003645, FOLN.
INTERPRO, IPRO003645, FOLN.
INTERPRO, IPRO00398, MAM domain.
INTERPRO, IPRO00398, TILL Cysrich.
INTERPRO, IPRO01007, WWF_C.
INTERPRO, IPRO01007, WWF_C.
INTERPRO, IPRO01007, WWF_D.
PÉAN, PPO0629, MAM; 3.
PÉAN, PPO0826, TIL, 25.
PÉAN, PPO0345, TIL, 25.
PÉAN, PRO0034, VWG, 4.
SMART, SMO0137, WAM; 3.
       InterPro; IPR002919; TIL_Cysrich.
InterPro; IPR001007; WWF_C.
InterPro; IPR00101646; WWF_D.
Pfam; PF01826; TIL; 3.
Pfam; PF00104; vwd; 4.
Pfam; PF00106; zona_pellucida; 1.
SWART; SM00181; EGF; 1.
SWART; SM00214; VWC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=129/Sv;
MEDLINE=21138439; PubMed=11239002;
                                                                                                                                                                                                                                                                                                                                                    Local Similarity 38.6
es 22; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MGD; MGI:106656; Zan.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN=129/Sv;
                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  099ND0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             00N660
                                                                                                                                                                                                                                                                                                                                                        Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 8
Q99ND0
         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ጽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2
                                               ;
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                646 GFCALG----CPOGGVYLQCGNSCNLTCRSLSLPDEECSEVCLEGCYCPPGLYQDERGDC 701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ESTUAIN-CD1; TISSUE-Cochlea; X MEDLINE-97236843; PubMed-9079715; A Legan P.K., Rau A., Keene J.N., Richardson G.P.; A Legan P.K., Rau A., Keene J.N., Richardson G.P.; Tectorins: modular matrix proteins of the inner ear homologous to components of the sperm-egg adhesion system."; J. Biol. Chem. 272:8791-8801(1997). RMBL; 939805; CAA68138.1; -. RMBL; 939805; CAA68138.1; -. RMSP; P00736; 1APQ.

R HSSP; P00736; 1APQ.

R HSSP; P00736; 1APQ.

R InterPro; IPR002086; Aldehyde_dehydr.

R InterPro; IPR001507; EdF like.

R InterPro; IPR001507; Endoglin/CD105.

R InterPro; IPR00121; FAS8 C.

R InterPro; IPR003886; Nidogen_ext.
                                                                                                      99 CPVNEVSNECHNPCTEKKCPQKNAPQVNCLMACQVGCSCMDGFVRNNQGVCVKEAEC 155
                                                                                    99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 GFGGLGGRGKCPSNEIFSRCDGRCQRFCPNV-VPKPLCIKICAPGCVCRLGYLRNKKKVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5; Gaps
                                               2; Gaps
                                                                                  CPSNEIFSRCDGRC-QRFCPNV-VPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKC
                                                                                                                                                                                                                                                                                                                                                  Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Musinae; Mus.
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29.8%; Score 116.5; DB 11; Length 2813; 30.3%; Pred. No. 7e-06; live 16; Mismatches 25; Indels 5;
     ch 30.2%; Score 118; DB 5; Length 796; l Similarity 36.8%; Pred. No. 1.4e-06; 21; Conservative 11; Mismatches 23; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-BALB/c;
Lenting P.J., Westein E., de Groot P.G., Denis C.V.;
Murine von Willebrand Factor.";
Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.
EMBL; AF539800; AAN07781.1;
SEQUENCE 2813 AA; 308854 MW; R2478C5710E688B5 CRC64;
                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence update)
Last annotation update)
                                                                                                                                                                                                                    PRT; 2813 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT; 2155 AA.
                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-JUL-1997 (TrEMBLrel. 04, 01-JUL-1997 (TrEMBLrel. 04, 01-MAR-2003 (TrEMBLrel. 23,
                                                                                                                                                                                                                                                                           (TrEMBLrel. 23, (TrEMBLrel. 23,
                                                                                                                                                                                                                                                   01-MAR-2003 (TrEMBLrel. 23,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20; Conservative
                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                              Von Willebrand factor.
                                                                                                                                                                                                                                                                                                                                  (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         702 VPKAQC 707
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 VPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alpha tectorin.
TECTA.
                                                                                                                                                                                                                                                                                                                                  Mus musculus
                                                                                                                                                                                                                                                                       01-MAR-2003
01-MAR-2003
                                                                                  12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     008523
                                                                                                                                                                                                                  Q8C1Z8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 7
008523
                                                                                                                                                                             RESULT 6
```

d δ d

à

DDT THE REPRESENTATION OF THE REPRESENTATION

```
|| :::|
BS QCVRQAQC 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=37546;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE=Fat body;
                                                                                                                                                                                                                                                  01-MAR-2003 (
01-MAR-2003 (
01-MAR-2003 (
                                                                                                                                                                                                                                                                                                                                                    SCO-spondin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Protease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                     Q8CG65;
Q8CG65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           08MX86;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 08MX86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 11
                                                                                                                                 RESULT 10
                                                                                                                                                              Q8CG65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q8MX86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SO DER REPERENT OF THE PROPERTY OF THE PROPERT
                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                    e,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84
                                                                                                                                                                                                                                                                                                                                                                              11 KCPSNEIFSRCDGRCQRFCPNVVPKPLC-----IKICAPGCVCRLGYLRNKKKVCVPR 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 GGLGGRGKCP---SNEIFSRCDGRCQRFCPNVVPKPLCIKICAPG-CVCRLGYLRNK-KK
                                                                                                                                                                                                                                                                                                                   10; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Caenorhabditis elegans.
Eukaryota, Metazoa, Nematoda, Chromadorea, Rhabditida, Rhabditoidea,
Rhabditidae, Peloderinae, Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Genome sequence of the nematode C. elegans: a platform for investigating biology. The C. elegans Sequencing Consortium."; Science 282:2012-2018(1998).
                                                                                                                                                                                                                                                  Query Match 28.9%; Score 113; DB 11; Length 5374; Best Local Similarity 37.5%; Pred. No. 3.5e-05; Matches 24; Conservative 8; Mismatches 22; Indels 10.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 5; Length 166;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=Bristol N2;
Blanchard M., Bradshaw H.;
Blanchard M., elegans cosmid B0238.";
"The sequence of C. elegans cosmid B0238.";
submitted (AUG-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (UN-2001) to the EMBL/GenBank/DDBJ databases.
EMBL, AF016450; AAB65990.1; -.
EMBL, P56682; ICCV.
Wormbep; BG0238.12; CE07702.
InterPro; IPR066209; EGF like.
InterPro; IPR062919; TIL_Cysrich.
PFMST PF03865; TIL; 2.
                                                                                                                                                                                        5374 AA; 579536 MW; 90D2D8CFE5DE24EB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hypothetical protein.
SEQUENCE 166 AA; 17971 MW; DA92F2473442ADBD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-JAN-1998 (TrEMBLrel. 05, Created)
01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
Hypothetical 18.0 kDa protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Match 28.5%; Score 111.5; DB 5;
Local Similarity 36.8%; Pred. No. 2.2e-06;
les 25; Conservative 11; Mismatches 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              166 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
STRAIN-Bristol N2;
MEDLINE=99069613; Pubmed=9851916;
SMART; SM00214; VWC; 17.
SMART; SM00216; VWD; 4.
PROSITE; PS00022; EGF_1; 1.
PROSITE; PS01186; EGF_2; 18.
PROSITE; PS50060; MAM_2; 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Waterston R.;
"Direct Submission.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       59 VCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. STRAIN=Bristol N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ::||
4798 NQCG 4801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         64 SKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=6239;
                                                                                                                                                           Glycoprotein.
SEQUENCE 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           016488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         입
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SON BREEF BR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
      à
                                                                                                                                                                                                                                                                                                                                                                                                                                           엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
```

```
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11 KCPSNEIFSRCD-GRCQRFCPNVVPKPL---CIKICAPGCVCRLGYLRNKKKVCVPRSKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11 GRG-CGONEEFTQCGSACEPSC-NRPRAQACTLQCIVGCQCRQGFLRNSSGRCVTPREC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKVCVPRSKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                SCO-SPONDIN.
Mus muscullus (Mouse).
Eukaryota; Letazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AKSOY S., Hao Z.;
"Immune responsive cDNA, PrInh6, characterized from fat body of
Glossina morsitans morsitans.";
Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AF368912; AAM46785.1;
InterPro; IPR002209; EGF like.
InterPro; IPR002219; TIL_Cysrich.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;;
?;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4,
                                                                                                                                                                                                                                                                                                                                                                                                                                             "Characterization, spatio-temporal expression and chromosomal assignment of mouse SCO-spondin.";
Submitted (JUN-2002) to the EMBL/GenBank/DDBJ databases.
EMBL, AJ491857; CAP42654.1; -.
SEQUENCE 4998 AA; 535019 MW; DA2ABA8DA47DF225 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-OCT-2002 (TrEMBLrel. 22, Created)
01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
01-OCT-2003 (TrEMBLrel. 23, Last sequence update)
Immune reactive putative protease inhibitor Prinh6 (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   / Match 28.4%; Score 111; DB 11; Length 4998; Local Similarity 36.7%; Pred. No. 5.9e-05; nes 22; Conservative 10; Mismatches 24; Indels 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota,
Neoptera, Endopterygota, Diptera, Brachycera, Muscomorpha,
Hippoboscoidea, Glossinidae, Glossina.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28.1%; Score 110; DB 5; Length 69; 40.7%; Pred. No. 1.6e-06; Live 5; Mismatches 28; Indels
                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
STRAIN=ICR; TISSUE=Brain;
Goncalves N., Simon-dasottes D., Creveaux I., Meiniel A.,
Guenet J-L., Meiniel R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE 69 AA; 7593 MW; FFBF296663A6C730 CRC64;
                                                                              Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   69 AA.
4998 AA
                                                       Created)
  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                 (TrEMBLrel. 23, C
(TrEMBLrel. 23, I
(TrEMBLrel. 23, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Glossina morsitans morsitans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROSITE; PS01186; EGF_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF01826; TIL; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 24; Conserv
```

```
29VU94;
                                                                                                                                                                       Q9VU94
                          ò
                                                 셤
                                                                               ò
                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               229 GGANEQYSACFSSCQPSCQD-PSTPACPAPGCQPGCICLPGYIRRDSSPRSACVPRGLC 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99
                                                                                                                                                                                               Caenorhabditis elegans.
Eukaryota, Metazoa, Nematoda, Chromadorea, Rhabditida, Rhabditoidea,
Rhabditidae, Peloderinae, Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12 CPSNEIFSRCDGRCQRFCPNVVPKPLC-IKICAPGCVCRLGYLR---NKKKVCVPRSKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Anopheles stepheńsi (Indo-Pakistan malazia mosquito).
Eukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota,
Neoptera, Endopterygota, Diptera, Nematocera, Culicoidea, Anopheles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE, PS00317, 4 DISULFIDE CORE, 1.
Alternative splicing; Copper, Metal-binding; Oxidoreductase; Zinc.
SEQUENCE 949 AA; 103486 MW; C850B2886C98B5F5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE=Salivary gland;
Valenzuela J.G., Francischetti I.M.B., Pham V.M., Garfield M.K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28.0%; Score 109.5; DB 5; Length 949; 39.0%; Pred. No. 2e-05; ive 7; Mismatches 24; Indels 5;
                                                                 01-AUG-1998 (TrEMBLrel. 07, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
T01D3.3 protein (EC 1.15.1.1) (Superoxide dismutase [Cu-Zn]).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ribeiro J.M.C.; "Exploring the sialome of the mosquito, Anopheles stephe Submitted (OCT-2002) to the EMBL/GenBank/DDBJ databases. EMBL; AY162234; AAO06826.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-MAR-2003 (TrEMBLrel. 23, Last sequence update) 01-MAR-2003 (TrEMBLrel. 23, Last annotation update) Putative salivary secreted serine protease inhibitor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84 AA; 9369 MW; CF34128FDDEDF64C CRC64;
                          949 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            84 AA
                                                                                                                                                                                                                                                                                                                                WormPep; T01D3.3a; CE18162.
WormPep; T01D3.3b; CE18163.
InterPro; IPR001424; SOD CU ZN.
InterPro; IPR00716; Thyroglobulin_1.
InterPro; IPR002919; T1L_Cysrich.
InterPro; IPR002221; WAP.
                                                    Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-MAR-2003 (TrEMBLrel. 23, Created)
                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00080; sodcu; 1.
Pfam; PF00086; thyroglobulin_1; 1.
Pfam; PF01826; TIL; 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                (TrEMBLrel. 03,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23; Conservative
                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          SMART; SM00211; TY;
PROSITE; PS00317; 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=30069;
                                                                                                                                                           NCBI_TaxID=6239;
                                                   01-MAY-1997
                                                               01-AUG-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Protease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                        P90956;
                       P90956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          081605
                                                                                                        T01D3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P90956
                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠ
```

```
RAIN STAINLEST, STAINLEST, RAINLEST, RAINLEST, STAINLEST, STAINLES
                                                                ω
,
                                                                                                   3 FGGLG---GRGKCPSNEIFSRCDGRCQRPCPNVVP--KPLCIKICAPGCVCRLGYLRNKK 57
                                                                                                                              Gaps
                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota,
Neoptera, Endopterygota, Diptera, Brachycera, Muscomorpha,
Ephydroidea, Drosophilidae, Drosophila.
NCBI_TaxID=7227;
                        Length 84;
                                                              30; Indels
                                                                                                                                                                                                                                                                                                                                                                                     Last sequence update)
Last annotation update)
                    Score 108; DB 5;
Pred. No. 3.4e-06;
7; Mismatches 30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FlyBase, FBgn0029167; Hml.
InterPro; IPR002557; Chitin bind PerA.
                                                                                                                                                                                                                                                                                                                                                                   Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Drosophila melanogaster (Fruit fly).
                        27.6%;
                                                                                                                                                                                                                                                                                                                                                Q9VU94;
01-MAY-2000 (TrEMBLrel. 13,
01-MAR-2001 (TrEMBLrel. 16,
EMBL; AE003536; AAF49795.2;
                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                  99
                                                                                                                                                                                                                       72 GNCVRAWRC 80
                                                                                                                                                                                  58 KVCVPRSKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=BERKELEY
                                                                                                                                                                                                                                                                                                                                                                                                                           Hml protein.
HML OR CG7002.
```

```
1130 KCPLGQVFDECGDGCALSCDDLPSKGSCKRECVEGCRCPHGEYVNEDGECVPKKMC 1185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11 KCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27.6%; Score 108; DB 5; Length 3843; 33.9%; Pred. No. 0.00011; Arive 7; Mismatches 30; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3843 AA; 426349 MW; 20095BC3BF21E49D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Search completed: November 17, 2003, 08:09:18 Job time : 36 secs
InterPro; IPRO01007; VWF_C.
InterPro; IPRO014846; VWF_D.
Pfam; PF01607; CBM_14; 1.
Pfam; PF01807; CBM_14; 1.
Pfam; PF01826; TIL; 4.
Pfam; PF01826; TIL; 4.
Pfam; PF00094; vwd; 5.
SWART; SW00032; CCP; 1.
SWART; SW00041; CT; 1.
SWART; SW00191; CT; 1.
SWART; SW00191; CT; 1.
SWART; SW00192; LDEA; 2.
SWART; SW00192; LDEA; 2.
SWART; SW00192; LDEA; 1.
SWART; SW00192; LDEA; 1.
PROSITE; PS01186; SGF_1; 2.
PROSITE; PS01186; RGF_1; 2.
PROSITE; PS01186; RGF_2; 1.
PROSITE; PS01286; VWFC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sest Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1130 KCPLGQVFDECGDGCALSCDDLPSKGSCKRECVEGCRCPHGEYVNEDGECVPKKMC 1185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 [1]—SEQUENCE FROM N.A. SEQUENCE FROM N.A. SEQUENCE Goto A., Kumagai C., Kumagai T., Hirose J., Narita H., Beck K., Mori H., Kadowaki T., Kitagawa Y.; Hisholectin H. Kadowaki T., Kitagawa Y.; Indentification and cloning of Hemolectin : A Drosophila protein with homology to the silkworm hemocytin and mammalian von Willebrand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11 KCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HML OR CG7002.
Drosophila melanogaster (Fruit fly).
Bukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match

27.6%; Score 108; DB 5; Length 3843;
Best Local Similarity 33.9%; Pred. No. 0.00011;
Matches 19; Conservative 7; Mismatches 30; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (DEC-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AB035891; BAA88518.1; -.
FISSP; PS6682; 1CCV.
FISSP; PS6682; 1CCV.
FISSP; PS6682; 1CCV.
InterPro; IPR0022167; Hml.
InterPro; IPR002207; Cys knot C.
InterPro; IPR006209; RGF-like.
InterPro; IPR006210; PSF-
InterPro; IPR006210; IRGF.
InterPro; IPR00610; IRGF.
InterPro; IPR006310; Jubi. SCR. CCF.
InterPro; IPR002919; TIL_CYsrich.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3843 AA; 426241 MW; 78D770C0B8B6319D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAX-2003 (TrEMBLrel. 23, Last annotation update)
HEMOLECTIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT; 3843 AA.
InterPro; IPR006207; Cys knot C.
InterPro; IPR006209; BGF like—
InterPro; IPR006210; BGF like—
InterPro; IPR006210; IEGF.
InterPro; IPR002172; IbL receptor A.
InterPro; IPR002172; IbL receptor A.
InterPro; IPR002199; TIL Cysrich.
InterPro; IPR001846; VWF_C.
Pfam; PF01807; VWF_C.
Pfam; PF01807; VWF_C.
Pfam; PF01807; TIL, 4.
Pfam; PF00754; P5_F8_type_C; 2.
Pfam; PF00754; P5_F8_type_C; 2.
Pfam; PF00054; VWG, 5.
SWART; SW00032; CCP; 1.
SWART; SW00019; TIL, 4.
SWART; SW00191; PASEC; 2.
SWART; SW00192; LDLa; 1.
SWART; SW00192; LDLa; 1.
SWART; SW00192; LDLa; 1.
SWART; SW00192; LDLa; 1.
PROSITE; PS01186; CTCK_2; 1.
PROSITE; PS01186; CTCK_2; 1.
PROSITE; PS01186; EGF_2; 1.
PROSITE; PS01186; EGF_2; 1.
PROSITE; PS01186; EGF_2; 1.
PROSITE; PS01186; EGF_2; 1.
PROSITE; PS01186; WWFC; 1.
EGF-like domain.
SEQUENCE 3843 AA; 426241 MW; 78D770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9U5D0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 15
Q9USD0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DER REPERENCE OF THE PROPERTY 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
        ò
```

.. 0

Gaps

ó;

Н

```
62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               55 NKKKVCVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 1373
                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-662-613-2
                     SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sequence 103, App
Sequence 103, App
Sequence 4736, Ap
Sequence 4736, Ap
Sequence 4734, Ap
Sequence 4734, Ap
Sequence 54, Appl
Sequence 56, Appl
Sequence 10, Appl
Sequence 19, Appl
Sequence 1518, Ap
Sequence 1579, Ap
Sequence 1579, Ap
Sequence 1579, Ap
Sequence 1579, Ap
Sequence 346, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             707, App
22635, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 2, Appli
                                                                                                  November 17, 2003, 08:08:37; Search time 20 Seconds (without alignments) 162.520 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                        1 GGFGGLGGRGKCPSNEIFSR.....CRLGYLRNKKKVCVPRSKCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pending Patents AA New:*

1: /cgn2 6/ptodata/2/paa/PCT NEW COMB.pep:*

2: /cgn2-6/ptodata/2/paa/USO6 NEW COMB.pep:*

3: /cgn2-6/ptodata/2/paa/USO7 NEW COMB.pep:*

4: /cgn2 6/ptodata/2/paa/USO8 NEW COMB.pep:*

5: /cgn2 6/ptodata/2/paa/USO8 NEW COMB.pep:*

6: /cgn2 6/ptodata/2/paa/USO8 NEW COMB.pep:*

7: /cgn2-6/ptodata/2/paa/USO8 NEW COMB.pep:*
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-662-613-2

US-09-963-693A-103

US-09-963-693A-103

US-09-05-658A-103

PCT-US03-28227-4735

US-60-487-610-1489

PCT-US03-28227-4734

US-10-388-838-54

US-10-388-838-54

US-10-388-838-54

US-10-388-838-54

US-10-388-838-50

US-10-365-35-98

US-10-43-466A-19

US-60-490-890-892

US-60-490-890-892

US-60-500-337-1580

US-60-503-349-70

US-60-500-337-1580

US-60-5
                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                        256763 segs, 48513562 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                      OM protein - protein search, using sw model
                                                                                                                                                                                                                                                             BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                             Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                      US-09-506-978-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    *
Query
Match Length D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1373
366
946
9469
9469
956
956
11360
11367
11367
11367
11367
11367
11367
11367
11367
11367
11367
11367
11367
11368
11368
11368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Perfect score:
                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score
                                                                                                                                                                                                                            Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database
                                                                                                            Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          No.
```

```
APPLICANT: Parid, Hossain A.
APPLICANT: Otieno, Charles J.
APPLICANT: Benkel, Bernhard F.
TITLE OF INVENTION: Insulin-Like Growth Factor-1 Receptor (IGF-1R) Polymorphic TITLE OF INVENTION: Alleles and Use of the Same to Identify DNA Markers for TITLE OF INVENTION: Reproductive Longevity
TITLE OF INVENTION: Reproductive Longevity
CURRENT APPLICATION NUMBER: US/10/662,613
CURRENT PILING DATE: 2003-09-15
NUMBER OF SEQ ID NOS: 22
                                                                                                                                                                                                                                                                                                                                          Sequence 4981, Ap
Sequence 4984, Ap
Sequence 2492, Ap
Sequence 5, Appli
Sequence 104, App
Sequence 2, Appli
Sequence 2, Appli
        3187, Ap
36, Appl
1215, Ap
177, App
177, App
196, App
196, App
2644, Ap
534, Appl
53340, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14 SNEIFSRC--DGRCQRFCPNVVPKPLCI---KICAPGCV------CRLGYLR 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22; Gaps
           Sequence Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 6; Length 1373;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 80; DB 6; Length 137
Pred. No. 44;
5; Mismatches 18; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: RUVKUL, GARY
APPLICANT: RUVKUL, GARY
TITLE OF INVENTION: THERAPEUTIC AND DIAGNOSTIC TOOLS FOR
TITLE OF INVENTION: IMPAIRED GLUCOSE TOLERANCE CONDITIONS
TITLE OF INVENTION: OF STATES TO THE REFERENCE: 00786/351004
CURRENT PELING DATE: 1001-09-25
PRIOR PRILING DATE: 1998-12-03
PRIOR PLING DATE: 1998-12-03
PRIOR PLING DATE: 1999-05-15
PCT-US03-26780-3187
PCT-US03-30694-36
PCT-US03-30720-1247
PCT-US03-30720-1215
PCT-US02-24483-176
US-10-474-794-196
PCT-US03-26780-2644
PCT-US03-26780-2644
US-10-474-794-196
PCT-US03-26340
US-10-473-305-1339
PCT-US03-28227-4983
US-60-500-337-2498
                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-357-885-104
US-09-623-063A-2
US-60-500-337-2416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-963-693A-103
; Sequence 103, Application US/09963693A
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2, Application US/10662613 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 33.8%;
Matches 23; Conservative
     10269
1037
1022
1023
1023
1024
1140
1037
1037
400
689
689
11138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: PRT
ORGANISM: Mus musculus
US-10-662-613-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          257 --- KGVCVP 262
```

```
qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 NNEYNYRCWTTNRCOKMCPSTCGKRACTENNECCHPECLGSCSAPDNDTACVACRHYYYA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14 SNEIFSRC--DGRCQRFCPNVVPKPLCI---KICAPGCV-------CRLGYLR 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22; Gaps
                                                                                                                                                                                                                                                                                                                                                                              22; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ##PHILCANT: RUNKLE, SELY
##PHILCANT: RUNKLE, SELY
##PHILCANT: RUNKLE, SELY
### TITLE OF INVENTION: IMPAIRED GLUCOSE TOLERANCE CONDITIONS
### CURRENT APPLICATION NUMBER: US/09/205,658A
### CURRENT FILING DATE: 1997-05-15
### PRIOR FILING DATE: 1997-05-15
### PRIOR FILING DATE: 1997-07-07
### PRIOR FILING DATE: 1997-07-07
### PRIOR FILING DATE: 1998-05-15
### PRIOR FILING DATE: 1998-05-15
### NUMBER OF SEQ ID NOS: 331
### SOFTWARE: FastSEQ for Windows Version 4.0
### SEC ID NO 103
### LENGTH: 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
18.4%; Score 72; DB 5; Length 366;
Best Local Similarity 30.9%; Pred. No. 60;
Matches 21; Conservative 5; Mismatches 20; Indels
                                                                                                                                                                                                                                                                                                                        DB 5; Length 366;
                                                                                                                                                                                                                                                                                                                                                                            IndelB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: INCYTE CORPORATION; SCHMIDT, Jeanette P.;
APPLICANT: WRIGHT, Rachel J.; BRUNS, Christopher M.;
APPLICANT: MARJANOVIC, Mirjana M.; SHEN, Fan,
APPLICANT: HARTSHORNE, Toinette A.; SUGHOROLSKI, Martin;
APPLICANT: ALTUS, Christina M.; PIITS, Steven J.;
APPLICANT: ELDER, Linda V.; MOONEY, Elizabeth M.;
                                                                                                                                                                                                                                                                                                                     18.4%; Score 72; DB 5; Le. 30.9%; Pred. No. 60; tive 5; Mismatches 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                14 SNEIFSRC--DGRCORFCPNVVPKPLCI---KICAPGCV
PRIOR APPLICATION NUMBER: 08/888,534
PRIOR FILING DATE: 1997-07-07
PRIOR FILING DATE: 1998-05-15
PRIOR FILING DATE: 1998-05-15
NUMBER OF SEQ ID NOS: 328
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 103
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 4736, Application PC/TUS0328227 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 103, Application US/09205658A
GENERAL INFORMATION:
APPLICANT: Ruvkun, Gary
                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 30.9
Matches 21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 G---VCVP 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121 G---VCVP 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     55 NKKKVCVP 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              55 NKKKVCVP 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 4
PCT-US03-28227-4736
                                                                                                                                                                                                                                                                    US-09-963-693A-103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-205-658A-103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-205-658A-103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
```

```
362 GNNGGCDPNSI------CTNTVGS---FK-CGP---CRLGFLGNQSQGCLPARTC 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7 GGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKC 66
APPLICANT: DELEGEANE, Angelo M.; PANESAR, Iqbal S.;
APPLICANT: BANVILLE, Steven C.; REDDY, Thirupathi P.;
APPLICANT: STEVENS, Kristian A.; BLANCHARD, John L.;
APPLICANT: PANZER, SCOCT R.; WANG, Xinhao;
APPLICANT: PANZER, SCACT R.; WANG, Xinhao;
APPLICANT: PERALTA, Careyra H.; ANDERSON, SCOCT E.;
APPLICANT: RIGHX, PERALTA, Careyra H.; ANDERSON, SCOCT E.;
APPLICANT: RIGHX, PANGERSON, SCOCT E.;
APPLICANT: M., Mingham C.; STUVE, Laura L.;
APPLICANT: M., Mingham C.; STUVE, Laura L.;
APPLICANT: M., Mingham C.; STUVE, Laura L.;
APPLICANT: WILL MINGHAME, R.; MINGROVE, James A.;
APPLICANT: VITT, Ursula A.; KIRTON, Edward;
APPLICANT: VITT, Ursula A.; KIRTON, Edward;
APPLICANT: WA, Yan; JACKSON, Jennifer L.;
APPLICANT: MA, Yan; JACKSON, Jennifer L.;
APPLICANT: GIEFEE, DAITY! PATURY, STİKANTH;
APPLICANT: GIEFEE, DAITY! PATURY, STİKANTH;
APPLICANT: MIL, Xiaobing; SUAREZ, Charlyn J.;
TITLE OF INVENTION: MOLECULES FOR DIAGNOSTICS AND THERAPEUTICS
FURRENT FILING DATE: 2003-09-12
PRIOR FILING DATE: 2003-09-12
PRIOR FILING DATE: 2002-09-12
PRIOR FILING DATE: PROGRAM
SOFTWARE: PERL PROGRAM
SOFTWARE: PERL PROGRAM
SOFTWARE: PERL PROGRAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TINCYTE CORPORATION; SCHMIDT, Jeanette P.;
WRIGHT, Rachel J.; BRUNS, Christopher M.;
WRAJANOVIC.
MIJDAM M.; SHEN, Fan;
HARTSHORNE, Toinette A.; SUCHOROLSKI, Martin;
T. HARTSHORNE, Toinette A.; SUCHOROLSKI, Martin;
T. BLIDER, Linda V.; MOONEY, Elizabeth M.;
T. BELBERAHE, Angelo M.; PANESAR, Idbal S.;
T. BANVILLE, Steven C.; REDDY, Thirupathi P.;
TSTEVENS, Kristian A.; BLANCHARD, John L.;
TPANZER, SCOTT R.; WANG, Xinhao;
T. PANZER, SCOTT R.; WANG, Xinhao;
T. HOUY, Pierre; SHEN, Edward H., Jr.;
TRIOUY, Pierre; SHEN, Edward J.;
TRIOUY, Pierre; SHEN, Edward J.;
T. HOUS, Pierre; SHEN, Edward J.;
T. HOGACE, Robert E.; SPIRO, Peter A.;
T. STEWART, Elizabeth A.; MINGROVE, James A.;
TT. HAGACE, Robert E.; SPIRO, Beter A.;
T. STEWART, Elizabeth A.; MINGROVE, James A.;
TT. POLICKY, Jania, KWONG, Mary;
TT. POLICKY, Jania, MARTIZ, Bonnie L.;
TT. MA, Yani JACKSON, Jennifer L.;
TT. MA, Yani JACKSON, Jennifer L.;
TT. MA, Yani JACKSON, Jennifer L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 18.4%; Score 72; DB 1; Length 941; Best Local Similarity 33.3%; Pred. No. 1.3e+02; Matches 20; Conservative 4; Mismatches 18; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OTHER INFORMATION: Incyte ID No: 962818.PT196p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 4735, Application PC/TUS0328227 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      , LOCATION: (1) ... (941)
, OTHER INFORMATION: unknown or other PCT-US03-28227-4736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: unsure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PCT-US03-28227-4735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT
```

```
FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1489, Application US/60487610
GENERAL INFORMATION:
APPLICANT: CARGILL, Michele
APPLICANT: CARGILL, Michele
APPLICANT: HUANG, Hongjin
TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
TITLE OF INVENTION: LIVER FIBROSIS IN HEPATITIS C VIRUS-INFECTED SUBJECTS,
TITLE OF INVENTION: METHONS OF DETECTION AND USES THEREOF
FILE REFERENCE: CLOO1469
CURRENT PILLING DATE: 2003-07-17
NUMBER OF SEQ ID NOS: 97101
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 1489
LENGTH: 956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           370 GNNGGCDPNSI-----CINTVGS---FK-CGP---CRLGFLGNGSQGCLPARTC 411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                377 GNNGGCDPNSI-----CTNTVGS---FK-CGP---CRLGFLGNQSQGCLPARTC 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7 GGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7 GGRGKCPSNBIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKYCVPRSKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18; Gaps
## APPLICANT: SHI, Xiaobing; SUAREZ, Charlyn J.
## TITLE OF INVENTION: MOLECULES FOR DIAGNOSTICS AND THERAPEUTICS
## FILE REFERENCE: PN-0100 PCT.
## CURRENT APPLICATION NUMBER: PCT/US03/28227
## CURRENT FILING DATE: 2003-09-12
## PRIOR PELLING DATE: 2002-09-12
## PRIOR FILING DATE: 2002-09-12
## PRIOR FILING DATE: 2002-09-12
## PRIOR FILING DATE: 2002-09-12
## NUMBER OF SEQ ID NOS: 5444
## SEQ ID NO 4738
## SEQ ID NO 4738
## SEQ ID NO 4738
## SEQ ID NO 4738
## SEQ ID NO 4738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18.4%; Score 72; DB 1; Length 949; 33.3%; Pred. No. 1.3e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18.4%; Score 72; DB 7; Length 956; 33.3%; Pred. No. 1.3e+02; tive 4; Mismatches 18; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 4334, Application PC/TUS0328227
GENERAL INFORMATION:
APPLICANT: INCYTE CORPORATION, SCHMIDT, Jeanette P.;
APPLICANT: WARJANOVIC, Mirjana M.; SHEN, Fan;
APPLICANT: HARTSHORNE, Toinette A.; SUCHOROLSKI, Martin, APPLICANT: AITUS, Christian M.; PITTS, Steven J.;
APPLICANT: ALTUS, Christian M.; PITTS, Steven J.;
APPLICANT: ELDER, Linda V.; MOONEY, Elizabeth M.;
APPLICANT: DELEGEANE, Angelo M.; PANESAR, Iqbal S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              OTHER INFORMATION: Incyte ID No: 962818.PT195p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCATION: (1) ... (949)
CTHER INFORMATION: unknown or other PCT-US03-28227-4735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity 33.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20; Conservative
                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Homo sapiens FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; ORGANISM: Homo sapiens
US-60-487-610-1489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
NAME/KEY: unsure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PCT-US03-28227-4734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-60-487-610-1489
                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Loce
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
```

```
A PRINCIPAL STANDARY REPORT () REALPHANDED, John L.)
A PRINCIANT PRINCIPAL GENERAL STANDARD AND MINISTERS AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND STANDARD AND
```

```
Matches
                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                          ઠ
                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 원
                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               389 GNNGGCDPNSI -----CTNTVGS---FK-CGP---CRLGFLGNGSQGCLPARTC 430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7 GGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                    18; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18.4%; Score 72; DB 6; Length 1359; 30.9%; Pred. No. 1.8e+02; tive 5; Mismatches 20; Indels
                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 33.3%; Pred. No. 1.4e+02;
Matches 20; Conservative 4; Mismatches 18; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 50, Application US/10388338
GENERAL INFORMATION:
APPLICANT: David w. Morris
APPLICANT: Marc Malandro
ITTLE OF INVENTION: Novel Therapeutic Targets in Cancer;
FILE REFERENCE: 52945200160,
CURRENT APPLICATION NUMBER: US/10/388,838
CURRENT FILING DATE: 2003-03-14
NUMBER OF SEQ ID NOS: 114
SOUTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: David W. Morris
APPLICANT: David W. Morris
APPLICANT: Marc Malandro
TITLE OF INVENTION: Novel Therapeutic Targets in Cancer
FILE REFERENCE: 5294520101600
CURRENT APPLICATION NUMBER: US/10/388,838
CURRENT FILING DATE: 2003-03-14
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 54
LENGTH: 1359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14 SNEIFSRC--DGRCORFCPNVVPKPLCI---KICAPGCV-
                                                                                                                                                                                                             FEATURE:
NAME/KEY: misc_feature
OTHER INFORMATION: Incyte ID No: 962818.PT191p
PRIOR APPLICATION NUMBER: US 60/410,260
PRIOR FILING DATE: 2002-09-12
PRIOR APPLICATION NUMBER: US 60/410,259
PRIOR FILING DATE: 2002-09-12
NUMBER OF SEQ ID NOS: 5444
SOFTWARE: PERL PROGRAM
SEQ ID NO 4733
LENGTH: 968
                                                                                                                                                                                                                                                                       FEATURE:
NAME/KEY: unsure
LOCATION: (1) ... (968)
COTHER INFORMATION: unknown or other
PCT-US03-28227-4733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-388-838-54; Sequence 54, Application US/10388838; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 30.9
Matches 21, Conservative
                                                                                                                                                                     TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; ORGANISM: Homo sapiens
US-10-388-838-54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         256 G---VCVP 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 55 NKKKVCVP 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 10
US-10-388-838-50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: .1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
```

```
Sequence 99, Application US/10365352

GENERAL INFORMATION:
APPLICANT: Weather, Georger
APPLICANT: Weather, Georger
APPLICANT: Dean, Nicholas
APPLICANT: Dobie, Kenneth
TITLE OF INVENTION: Modulation of insulin-like growth factor I receptor expressic
CURRENT APPLICANT: 229752002500
CURRENT FILING DATE: 2003-02-11
NUMBER OF SEQ ID NOS: 98
SOFTWARE: Patentin version 3.1
SEQ ID NO 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        196 NNEYNYRCWTTNRCOKMCPSTCGKRACTENNECCHPECLGSCSAPDNDTACVACRHYYA 255
                                                                                                                                                                                                             54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14 SNEIFSRC--DGRCQRFCPNVVPKPLCI---KICAPGCV------CRLGYLR 54
                                                                                                                                                                                                             ----CRLGYLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 10, Application PC/TUS0311867
; Sequence 10, Application PC/TUS0311867
; GRNERAL INPORMATION:
; APPLICANT: Hitoshi, Yasumichi
; APPLICANT: Hitoshi, Yasumichi
; APPLICANT: Rigel Pharmaceuticals, Inc.
; TILE OF INVENTION: Methods of Assaying for Cell Cycle Modulators
; FILE REFERENCE: 021044-00310PC
; CURRENT FILING DATE: 2003-04-15
; PRIOR PILING DATE: 2003-04-15
; PRIOR PLING DATE: 2002-04-15
; PRIOR PILING DATE: 2002-04-15
; PRIOR FILING DATE: 2002-04-15
; NUMBER OF SEQ ID NOS: 60
; NUMBER OF SEQ ID NOS: 60
; NUMBER OF SEQ ID NOS: 60
                                                                                                                                                          22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OTHER INFORMATION: insulin-like growth factor 1 receptor (IGFIR) OTHER INFORMATION: (cell surface kinase receptor)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18.4%; Score 72; DB 1; Length 1367; 30.9%; Pred. No. 1.8e+02;
                                                                                                          Length 1360;
                                                                                                                                                                                                     14 SNEIFSRC--DGRCQRFCPNVVPKPLCI---KICAPGCV-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20;
                                                                                                     Score 72; DB 6; Le
Pred. No. 1.8e+02;
5; Mismatches 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5; Mismatches
                                                                                                     Query Match
Best Local Similarity 30.9%;
Matches 21; Conservative 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: PRT
ORGANISM: Homo sapiens
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-388-838-50
                                                                                                                                                                                                                                                                                                                                                             256 G---VCVP 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           258 G---VCVP 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           55 NKKKVCVP 62
                                                                                                                                                                                                                                                                                                        55 NKKKVCVP 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PCT-US03-11867-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 12
US-10-365-352-98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID NO 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
```

```
셤
                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                            198 INEYNYRCWITINRCOKMCPSICGKRACTENNECCHPECLGSCSAPDNDIACVACRHYYYA 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1518, Application US/60487610
GENERAL INFORMATION:
APPLICANT: CARGILL, Michele
APPLICANT: GRAGIL, Michele
APPLICANT: HUANG, Honglin
TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
TITLE OF INVENTION: LIVER FIBROSIS IN HEPATITIS C VIRUS-INFECTED SUBJECTS,
TITLE OF INVENTION: METHODS OF DETECTION AND USES THEREOF
FILE REPERENCE: CLO01469
CURRENT APPLICATION NUMBER: US/60/487,610
                                                                                                                                                                                                                    -----CRLGYLR 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----CRLGYLR 54
                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22; Gaps
                                                                                                                                                                     22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Leonand, Presta
APPLICANT: Leonand, Presta
APPLICANT: Leonand, Presta
APPLICANT: Etangerah, Diane
APPLICANT: Reingerah, Diane
APPLICANT: Williams, Denise
APPLICANT: Williams, Denise
APPLICANT: Williams, Denise
APPLICANT: Srinivasan, Mohan
TITLE OF INVENTION: NURTRALIZING HUMAN ANTI-IGFR ANTIBODY
FILE REPERENCE: OCO1533.K-US
CURRENT APPLICATION NUMBER: US/10/443,466A
CURRENT FILING DATE: 2003-05-22
PRIOR APPLICATION NUMBER: 60/393,214
PRIOR APPLICATION NUMBER: 60/393,214
PRIOR APPLICATION NUMBER: 60/393,214
PRIOR FILING DATE: 2002-07-02
PRIOR FILING DATE: 2002-12-23
NUMBER OF SEQ ID NOS: 120
SOFTWARE: Patentin Version 3.1
SEQ ID NO 19
LENGTH: 1367
                                                                                                                  Query Match 18.4%; Score 72; DB 6; Length 1367; Best Local Similarity 30.9%; Pred. No. 1.8e+02; Matches 21; Conservative 5; Mismatches 20; Indels ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 18.4%; Score 72; DB 6; Length 1367; Best Local Similarity 30.9%; Pred. No. 1.8e+02; Matches 21; Conservative 5; Mismatches 20; Indels
                                                                                                                                                                                                               14 SNEIFSRC--DGRCQRFCPNVVPKPLCI---KICAPGCV----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14 SNEIFSRC--DGRCORFCPNVVPKPLCI---KICAPGCV---
                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-443-466A-19; Sequence 19, Application US/10443466A; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Seque...
GENERAL INFORMATICA..
APPLICANT: Wang, Yan
APPLICANT: Pachter, Jonathan A
APPLICANT: Hailey, Judith
APPLICANT: Greenberg, Robert
AppliCANT: Greenberg, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; ORGANISM: Homo sapiens
US-10-443-466A-19
                                                                                                                                                                                                                                                                                                                                                       258 G---VCVP 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    258 G---VCVP 262
                                                                                                                                                                                                                                                                                                           55 NKKKVCVP 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        55 NKKKVCVP 62
                                           ORGANISM: human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 14
US-60-487-610-1518
LENGTH: 1367
                                                                    US-10-365-352-98
                        TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: PRT
                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                           엄
                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
```

```
4.
                                                                                                                                                                                                                                                                                                                                                      198 NNEYNYRCWITURCQKMCPSICGKRACIENNECCHPECLGSCSAPDNDTACVACHHYYA 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         198 NNEYNYRCWTTNRCQKMCPSTCGKRACTENNECCHPECLGSCSAPDNDTACVACRHYYA 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14 SNBIFSRC--DGRCQRFCPNVVPKPLCI---KICAPGCV------CRLGYLR 54
                                                                                                                                                                                                                                                                                                                      ----CRLGYLR
                                                                                                                                                                                                                                                                           22; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 892, Application US/60490890
GENERAL INFORMATION:
APPLICANT: Li, Martha
APPLICANT: Webster, Kevin R.
APPLICANT: Webster, Kevin R.
APPLICANT: Weng, "Donald
APPLICANT: Bowley Tai W.
APPLICANT: Bloward W.
FILE REFERENCE: Bloward W.
FILE REFERENCE: D0310 PSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 18.4%; Score 72; DB 7; Length 1367; Best Local Similarity 30.9%; Pred. No. 1.8e+02; Matches 21; Conservative 5; Mismatches 20; Indels ;
                                                                                                                                                                                                                    18.4%; Score 72; DB 7; Length 1367; 30.9%; Pred. No. 1.8e+02; Live 5; Mismatches 20; Indels
                                                                                                                                                                                                                                                                                                                      14 SNEIFSRC--DGRCQRFCPNVVPKPLCI---KICAPGCV-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Search completed: November 17, 2003, 08:14:05 Job time: 20 secs
CURRENT FILING DATE: 2003-07-17
NUMBER OF SEQ ID NOS: 97101
SEQ ID NO 1518
SEQ ID NO 1518
LENGTH: 1367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION NUMBER: US/60/490,890
CURRENT FILING DATE: 2003-07-29
NUMBER OF SEQ ID NOS: 2779
SOFTWARE: Patentin version 3.2
SEQ ID NO 892
LENGTH: 1367
                                                                                                                                                                                                               Query Match
Best Local Similarity 30.99
Matches 21, Conservative
                                                                                                                     TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; TYPE: PRT
; ORGANISM: Homo sapiens
US-60-490-890-892
                                                                                                                                                                                                                                                                                                                                                                                                                                                               258 G---VCVP 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             258 G---VCVP 262
                                                                                                                                                                                                                                                                                                                                                                                                                  55 NKKKVCVP 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                55 NKKKVCVP 62
                                                                                                                                                                       US-60-487-610-1518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 15
US-60-490-890-892
```

128, App 4, Appli 1, Appli 25, Appl 49, Appl

0404040040 0000004000

Н

```
Sequence 7. Application US/09394630

Facent (No. 6395306

GENERAL INFORMATION

APPLICANT: Cul, Xiangmin

APPLICANT: Lu, Yuefeng

TITLE OF INVENTION: Useful Properties of a Bee Venom Protein and Gene

TITLE OF INVENTION: Useful Properties of a Bee Venom Protein and Gene

FILE REFERENCE: 019049-000200US

CURRENT PELING DATE: 1999-09-13

FRICH APPLICATION NUMBER: US/09/394,630

CURRENT PILING DATE: 1999-09-14

FRICH FILING DATE: 1996-09-14

SOFTWARE: Patentin Ver: 2.0

SEQ ID NO: 2.2

SEQ ID NO: 2.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIXICAPGCVCRLGYLRNKKKVC 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC
                                                            Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                     Sequence
Sequence
                            Seguence
                                                                                                                                                                                              Sequence
                                                                                                                                                                                                         Sequence
                Sequence
                                       Sequence
                                                 Sequence
                                                                                                            Sequence
                                                                                                                       Sequence
                                                                                                                                    Sequence
                                                                                                                                               Sequence
                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 2, Application US/08276967

Patent No. 5851817

GENERAL INFORMATION:
APPLICANT: Hardy, Daniel M.
APPLICANT: Garbers, David L.
TITLE OF INVENTION: Specimes-Specific Egg-Binding Proteins of TITLE OF INVENTION: Sperm
NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
ADDRESSER: Arnold, White & Durkee
STREET: P. O. Box 4433
CITY: Houston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 92;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%; Score 391; DB 4;
100.0%; Pred. No. 1.5e-33;
tive 0; Mismatches 0;
US-09-249-448-128
US-09-249-448-128
US-09-249-448-128
US-09-219-983A-4
US-09-381-261A-1
US-08-465-380-25
US-08-465-380-49
US-08-465-380-49
US-08-486-399-49
US-08-486-399-49
US-08-461-965-49
US-08-461-965-49
US-08-461-965-49
US-08-361-10A-54
US-08-361-10A-54
US-08-361-10A-54
US-08-361-10A-54
US-08-361-10A-54
US-08-361-25
US-08-361-365-25
US-08-361-365-25
US-08-361-365-25
US-08-361-365-25
US-08-361-365-25
US-08-361-361-35
                                                                                                                                                                                                                                         ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67; Conservative
  ; TYPE: PRT
; ORGANISM: Apis mellifera
US-09-394-630-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ||||||||
86 VPRSKCG 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 VPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
Matches 67; Conserv
  RESULT 2
US-08-276-967-2
  RESULT 1
US-09-394-630-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
 ଚ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2, Appli
Sequence 7, Appli
Sequence 7, Appli
Sequence 59, Appli
Sequence 59, Appl
Sequence 59, Appl
Sequence 59, Appl
Sequence 59, Appl
Sequence 59, Appl
Sequence 59, Appl
Sequence 59, Appl
Sequence 59, Appl
Sequence 59, Appl
Sequence 59, Appl
Sequence 59, Appl
Sequence 128, Appl
                                                                           November 17, 2003, 08:07:17; Search time 22 Seconds (without alignments) 128.856 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                            US-09-506-978-1
391
1 GGFGGLGGRGCKCPSNEIFSR.....CRLGYLRNKKKVCVPRSKCG
                                                                                                                                                                                                                                                                                                                                            1ssued Patents AA:*
1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
5: /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
6: /cgn2_6/ptodata/1/iaa/pcTUS_COMB.pep:*
           GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-394-630-2

US-08-276-967-2

US-08-276-967-2

US-08-46-397-59

US-08-46-397-59

US-08-46-96-59

US-08-66-397-59

US-09-249-471-59

US-09-249-471-59

US-09-249-471-59

US-09-249-471-59

US-09-249-471-128

US-08-465-380-128

US-08-461-128

US-08-461-128

US-08-461-128

US-08-461-128

US-08-461-128

US-09-249-471-128

US-09-249-471-128

US-09-249-471-128

US-09-249-471-128

US-09-249-471-128
                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                               328717 segs, 42310858 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUMMARIES
                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                          - protein search, using sw model
                                                                                                                                                                           BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                            seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query
Match 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Title:
Perfect score:
                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minimum DB
Maximum DB
                                                        OM protein
                                                                                                                                                      Sequence:
                                                                                                                                                                                                               Searched:
                                                                                                                                                                                                                                                                                                                                               Database
                                                                                 Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Result
```

ö

Gaps

9

ij

```
1531 BCPPNSHYELCADTCSLGCSALSAPPQCQDGCAEGCQCDSGFLYN-GQACVPIQQCG 1586
                                                                                                                                                                                                                                                                                                                                                                                                                                                   11 KCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11 KCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                       1; Gaps
                                                                                                                                                                                                                                                                                                                           DB 3; Length 2594;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 5405;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 9, Application US/08718388
| Patent No. 6271362
| Carner No. 6271362 |
| Carner No. 6271362 |
| Carner No. 6271362 |
| Carner No. 6271362 |
| Carner No. 6271362 |
| TITLE OF INVENTION: GENE ENCODING IGG FC REGION-BINDING |
| TITLE OF INVENTION: PROTEIN |
| NUMBER OF SEQUENCES: 29 |
| CORRESPONDENCE ADDRESS: |
| ADDRESSEE BIRCH, STEWART, KOLASCH AND BIRCH |
| STREET: PO BOX 147 |
| CITY: PALLS CHURCH |
| STREET: PALLS CHURCH |
| CONTRACTOR |
| CONTRACTOR |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CANTANT |
| CAN
                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY: USA
ZIF: 22040-0747
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURREMY APPLICATION DATA:
APPLICATION NUMBER: US/08/718,388
                                                                                                                                                                                                                                                                                                                    Query Match 27.2%; Score 106.5; DB 3; Best Local Similarity 36.8%; Pred. No. 0.0064; Matches 21; Conservative 6; Mismatches 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27.2%; Score 106.5; DB 3; 36.8%; Pred. No. 0.013; tive 6; Mismatches 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICAL.
FILING DATE:
CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: MURPHY JR, GERALD M
REGISTRATION NUMBER: 28,977
REFERENCE/DOCKET NUMBER: 0230-
TELECOMMUNICATION INFORMATION:
TELEPAX: (703) 205-8000
TELEPX: (703) 205-8000
TELEPX: (703) 205-8000
TELEPX: (703) 205-8050
INFORMATION FOR SEQ ID NO: 9:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 5
US-08-465-380-59
; Sequence 59, Application US/08465380
; Patent No. 5863894
(703) 205-8000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      : 5405 amino acids
amino acid
                                                                                                                        2594 amino acids
             TELEFAX: (7/3) 205-805
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
IRNGTH: 2594 amino acida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 36.8<sup>§</sup>
Matches 21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7 TOPOLOGY: linear
7 MOLECULE TYPE: protein
US-08-718-388-9
                                                                                                                                                                                                                   MOLECULE TYPE: protein
                                                                                                                                                      amino acid
                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VA
USA
TELEPHONE:
                                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-718-388-9
                                                                                                                                                                                                                                                    US-08-718-388-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1455 KCPSGSSYSTCANPCPATCLSLNNPSYCPSTLP----CAEGCECQKGHILSGTS-CV 1506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----QRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 107.5; DB 2; Length 2476;
Pred. No. 0.0048;
9; Mismatches 18; Indels 17; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-718-388-7

Sequence 7, Application US/08718388

Sequence 7, Application US/08718388

Sequence 7, Application US/08718388

Sequence 7, Application US/08718388

APPLICANT: MORIKAWA, MINORU

APPLICANT: MORIKAWA, MINORU

TITLE OF INVENTION: BROCE IN TITLE OF INVENTION: PROTEIN

MUMBER OF SEQUENCES: 29

CORRESPONDENCE ADDRESS:

ADDRESSEE: BIRCH, STEWART, KOLASCH AND BIRCH

STREET: PO BOX 747

CITY: PALLS CHURCH
                                                                             COMPUTER FRADABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Eloppy disk
COMPUTER: Eloppy disk
COMPUTER: Elem PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/276,967
FILING DATE: Submitted Herewith
CLASSIFICATION: 530
ATTONREY/AGBAT INPORMATION:
NAME: Kitchell, Barbara S.
REGISTRATION NUMBER: 33,928
REGISTRATION NUMBER: 33,928
REGISTRATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELERPAK: 713-787-1490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CITY: FALLS CHURCH
STATE: VA
COUNTRY: 22040-0747
ZIP: 22040-0747
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: BIN FC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PAtentin Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURENT APPLICATION DATA:
APPLICATION NUMBER: US/08/718,388
FILING DATE:
CLASSIFICATION: 536
ATTORNEY AGENT INFORMATION:
NAME: MURPHY JR, GERALD M
' REGISTATION NUMBER: 28,97
REFERENCE/DOCKET NUMBER: 0230-111
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEX: 79-0924
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 2476 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 Similarity 33.3 22; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11 KCPSNEIFSRCDGRC-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY: linear

MOLECULE TYPE: protein

US-08-276-967-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1507 PLŚQĆĠ 1512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRSKCG 67
                                                     77210-4433
Texas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEFAX:
TELEX: 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

ä

```
11 KCPSNEIFSRCDGR-CQRFC------PNVVPKPLCIKICAPGCVCRLGYLRNKK 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S QCBENEKYDSCGSKECDKKCKYDGVEBEDDEEPNV---PCLVRVCHQDCVCEEGFYRNKD 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24; Indels 16; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
25.6%; Score 100; DB 2; Length 84;
Best Local Similarity 30.4%; Pred. No. 0.0012;
Matches 21; Conservative 8; Mismatches 24; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: George P. Vlasuk, Patric H. Stanssens, APPLICANT: Gorge P. Vlasuk, Patric H. Stanssens, APPLICANT: Joris H.L. Mensens, Marc J. Lauwereys, APPLICANT: Yves R. Laroche, Laurent S. Jespers, APPLICANT: Yearnick G.J. Gansemans, Matthew Moyle, APPLICANT: Peter W. Bergum TITLE OF INVENTION: NEMATODE-EXTRACTED ANTICOAGULANT TITLE OF INVENTION: PROTEIN NUMBER OF SEQUENCES: 356
CORRESPONDENCE ADDRESS:
ADDRESSE: Lyon & Lyon STREET: 631 West Fifth Street
                                                                                                                                                                                                                                                                                                                   COMPUTER READMBLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: storage
COMPUTER: Diskette, 1.44 Mb
MEDIUM TYPE: storage
COMPUTER: Diskette, 1.44 Mb
MEDIUM TYPE: storage
COMPUTER: Diskette, 1.44 Mb
MEDIUM TYPE: storage
COMPUTER: Diskette, 1.44 Mb
SOPTWARB: DEMONSTRIED BATA:
APPLICATION NUMBER: US/08/486,397
FILING DATE: June 5, 1995
CILASSIFTCATION: 5,0
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/326,110
FILING DATE: October 18, 1994
ATTONEY/AGENT INFORMATION:
NAME: BIGGS, SUZANNE L.
REGISTRATION NUMBER: 30,158
REFERENCE/DOCKET NUMBER: 30,158
REFERENCE/DOCKET NUMBER: 313/269
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION OF 59:
SEGUENCE CHARACTERISTICS:
LENGTH: 84 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Ancyclostoma caninum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 59, Application US/08486399
; Patent No. 5866543
; GENERAL INFORMATION:
                                                 CORRESPONDENCE ADDRESS:
ADDRESSEE: Lyon & Lyon
STREET: 633 West Fifth Street
STREET: Suite 4700
CITY: Los Angeles
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE: peptide ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         62 DKCVSAEDC 70
                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: Los Angeles
STATE: California
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                58 KVCVPRSKC
                                                                                                                                                                                                                                                                            U.S.A.
                                                                                                                                                                                                                                                                         COUNTRY: U
ZIP: 90071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: amir
TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-486-397-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-486-399-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11 KCPSNEIFSRCDGR-CQRFC------PNVVPKPLCIKICAPGCVCRLGYLRNKK 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S QCGENEXYDSCGSKECDKKKKYDGVEEEDDBEPNV---PCLVRVCHQDCVCEEGFYRNKD 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24; Indels 16; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 25.6%; Score 100; DB 2; Length 84; Best Local Similarity 30.4%; Pred. No. 0.0012; Matches 21; Conservative 8; Mismatches 24; Indels
           APPLICANT: George:
APPLICANT: George:
APPLICANT: George:
APPLICANT: George:
APPLICANT: Toris H.L. Mensens, Marc J. Lauwereys,
APPLICANT: Yoes R. Laroche, Laurent S. Jespers,
APPLICANT: Yes R. Laroche, Laurent S. Jespers,
APPLICANT: Peeter W. Bergum
TITLE OF INVENTION: NEMATODE-EXTRACTED ANTICOAGULANT
TITLE OF INVENTION: PROTEIN
NUMBER OF SEQUENCES: 356
CORRESPONDENCE ADDRESS:
ADDRESSEE: Lyon
STREET: 633 West Fifth Street
STREET: Suite 4700
CITY: Los Angeles
STATE: California
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 59, Application US/08486397
Patent No. 5866542
GENERAL INFORMATION:
APPLICANT: George P. Vlasuk, Patric H. Stanssens, APPLICANT: Joris H.L. Mensens, Marc J. Lauwereys, APPLICANT: Yves R. Laroche, Laurent S. Jespers, APPLICANT: Yannick G.J. Gansemans, Matthew Moyle, APPLICANT: Peter W. Bergum
TITLE OF INVENTION: NEWATORE-EXTRACTED ANTICOAGULANT TITLE OF INVENTION: PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: storage
CONFUTER: IBM Compatible
OPERATING SYSTEM: IBM P.C. DOS 5.0
SOFTWARE: Word Perfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/465,380
FILING DATE: June 5, 1995
CLASSIFTCATION S30
FILING DATE: October 18, 1994
ATTONEY/ABGNT INFORMATION:
NAME: BIGGS, SUZANNE L.
REGISTRATION NUMBER: 30,158
REGISTRATION NUMBER: 30,158
REGISTRATION NUMBER: 30,158
TELEFONE (213) 489-1600
TELEFONE: (213) 489-1600
TELEFONE: (213) 489-1600
TELEFONE: (213) 955-0440
TELEFONE: MAIN OF SEQ ID NO: 59:
SEQUENCE CHARACTERISTICS:
LEMGTH: B4 amino acids
TOPOLOGY: linear
MOLECULE TYPE: PEPPLICE:
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE: PEPPLICE
CONTANTON FOR SEQ ID BODINGE
MOLECULE TYPE
MOLECULE TYPE
MOLECULE TYPE
MOLECULE TYPE
MOLECULE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; ORGANISM: Ancyclostoma caninum US-08-465-380-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 58 KVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DKCVSAEDC 70
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-486-397-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
```

δ

```
11 KCPSNEIFSRCDGR-CQRFC------PNVVPKPLCIKICAPGCVCRLGYLRNKK 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5 QCGENEKYDSCGSKECDKKCKYDGVBEBDDEBPNV---PCLVRVCHQDCVCEBGFYRNKD 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 25.6%; Score 100; DB 2; Length 84; Best Local Similarity 30.4%; Pred. No. 0.0012; Matches 21; Conservative 8; Mismatches 24; Indels 16; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Stanseens, Patrick Eric Hugo
APPLICANT: Stanseens, Patrick Eric Hugo
APPLICANT: Mensens, Joris Hilda Lieven
APPLICANT: Laroche, Yves Rene
APPLICANT: Laroche, Yves Rene
APPLICANT: Jespers, Laurent Stephane
APPLICANT: Gespers, Laurent Stephane
APPLICANT: Moyle, Matthew
APPLICANT: Moyle, Matthew
APPLICANT: Bergum, Peter W.
TITLE OF INVENTION: NEMATODE-EXTRACTED ANTICOAGULANT
TITLE OF INVENTION: NEMATODE-EXTRACTED ANTICOAGULANT
WUMBER OF SEQUENCES: 356
                           FILING DATE: June 5, 1995
CLASSIFICATION 530
PRIOR APPLICATION 1530
PRIOR APPLICATION DATE: 08/326,110
APPLICATION NUMBER: 08/326,110
FILING DATE: October 18, 1994
ATTORNEY AGENT INFORMATION:
NAME: BIGGS, SUZANNE L.
REGISTRATION NUMBER: 30,158
REFERENCE/DOCKET NUMBER: 210/243
TELECHANNINICATION INFORMATION:
TELECHAN: (213) 955-0440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ZIP: 90071
COMPUTER READBLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM Compatible OPERATING SYSTEM: IBM P.C. DOS 5.0 SOFTWARE: Word Perfect 5.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/634,641
FILING DATE: April 19, 1996
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/13231
                                                                                                                                                                                                                                                                                                                      TELERAX: (213) 955-0440

TELERAX: (7-3510

INFORMATION FOR SEQ ID NO: 59:

SEQUENCE CHARACTERISTICS:

LENGTH: 84 amino acids

TYPE: amino acid

TOPOLOGY: linear

MOLECULE TYPE: peptide

ORGANISM: BOURCE:

ORGANISM: Ancyclostoma caninum
US-08-461-965-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
ADDRESSE: Lyon & Lyon
STREET: 633 West Fifth Street
STREET: Suite 4700
CITY: Los Angeles
STATE: California
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-634-641-59; Sequence 59, Application US/08634641; Patent No. 5955294
  APPLICATION NUMBER: US/08, PILING DATE: June 5, 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     58 KVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         62 DKCVSAEDC 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11 KCPSNEIFSRCDGR-CQRFC------PNVVPKPLCIKICAPGCVCRLGYLRNKK 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5 QCGENEKYDSCGSKECDKKCKYDGVEEDDEEPNV---PCLVRVCHQDCVCEEGFYRNKD 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 25.6%; Score 100; DB 2; Length 84; Best Local Similarity 30.4%; Pred. No. 0.0012; Matches 21; Conservative 8; Mismatches 24; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 59, Application US/08461965
(Patent No. 5872098
GENERAL INFORMATION:
APPLICANT: George P. Vlasuk, Patric H. Stanssens,
APPLICANT: Joris H.L. Mensens, Marc J. Lauwereys,
APPLICANT: Yess R. Larcofte, Laurent S. Jespers,
APPLICANT: Peter W. Bergum
ITLER OF INVENTION: NEMATOBE-EXTRACTED ANTICOAGULANT
ITLER OF INVENTION: PROTEIN
NUMBER OF SEQUENCES: 356
CORRESPONDENCE ADDRESS:
ADDRESSEE: Lyon & Lyon
STREET: 633 Weat Fifth Street
STREET: Suite 4700
CITY: Los Angeles
STREET: Galifornia
COUNTRY: U.S.A.
CIP: 90071

COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: Storage
COMPUTER: IBM COMPATIBLE
CORPUTER: IBM COMPATIBLE
CORPUTER: IBM COMPATIBLE
CORPUTER: Word Perfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/486,399
FILING DATE: June 5, 1995
CLASSIPTCATION DATA:
APPLICATION NUMBER: 08/326,110
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/326,110
FILING DATE: OCCODER 18, 1994
ATTORNEY/AGENT INFORMATION:
NAME: BIGGS, SUZANNE I.
NAME: BIGGS, SUZANNE I.
TELEFRANCE/DOCKET NUMBER: 30,158
REFERENCE/DOCKET NUMBER: 30,158
REFERENCE/DOCKET NUMBER: 213/270
TELEFRANCE: (213) 489-1600
TELEFRA: 67-3510
INFORMATION FOR SEQ ID NO: 59:
SEQUENCE CHARACTERISTICS:
LENGTH: 84 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM Compatible
OPERATING SYSTEM: IBM P.C. DOS 5.0
SOFTWARE: Word Perfect 5.1
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE: peptide
CRIGINAL SOURCE:
ORGANISM: Ancyclostoma caninum
US-08-486-399-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          58 KVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62 DKCVSAEDC 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     amino acid
GY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 90071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JS-08-461-965-59
```

g ò

3,

```
------PNVVPKPLCIKICAPGCVCRLGYLRNKK 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5 QCGENEKYDSCGSKECDKKCKYDGVEEEDDBEPNV---PCLVRVCHQDCVCEEGFYRNKD 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ch 25.6%; Score 100; DB 3; Length 84; I Similarity 30.4%; Pred. No. 0.0012; 21; Conservative 8; Mismatches 24; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: PROTEIN
NUMBER OF SEQUENCES: 356
ADDRESSEE: Lyon
STREET.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lauwereys, Marc Josef
Laroche, Yves Rene
Gaspers, Laurent Stephane
Gansemans, Yannick Georges Jozef
Moyle, Matthew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Vlasuk, George Phillip
Stanssens, Patrick Eric Hugo
Messens, Joris Hilda Lieven
                                                                                                                                          PRICATION DATA:
APPLICATION NUMBER: 08/809,455
FILING DATE: APRIL17, 1995
APPLICATION NUMBER: PCT/US95/13231
APPLICATION NUMBER: 08/486,399
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/486,399
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/465,380
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/465,380
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/326,110
FILING DATE: COCLOBER: 18, 1994
ATTORNEY/AGENT INFORMATION:
NAME: BIGGS, SUZANNE L.
REGISTRATION NUMBER: 30,158
REFERENCE/DOCKET NUMBER: 216/270
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
                                                CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/249,471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 59, Application US/09249472
Patent No. 6046318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Ancyclostoma caninum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: Lyon & Lyon
STREET: 633 West Fifth Street
STREET: Suite 4700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : (213) 489-1100
: ELEFAX: (213) 955-0440
: TELEX: 67-3510
: INPORMATION FOR SEQ ID NO: 59: SEQUENCE CHARACTERISTICS: LENGTH: 84 amin - TYPF:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11 KCPSNEIFSRCDGR-CQRFC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE: peptide ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           58 KVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62 DKCVSAEDC 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET: Suite 470
CITY: Los Angeles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: Vlasuk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
BAPPLICANT:
BAPPLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-249-471-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 11
US-09-249-472-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11 KCPSNEIFSRCDGR-CQRFC------PNVVPKPLCIKICAPGCVCRLGYLRNKK 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25.6%; Score 100; DB 2; Length 84;
30.4%; Pred. No. 0.0012;
.tive 8; Mismatches 24; Indels 16; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               y sequence 59, Application US/09249471

general Information:
GENERAL INFORMATION:
APPLICANT: Vlacuk, George Phillip
APPLICANT: Vlacuk, George Phillip
APPLICANT: Lauvents Patrick Eric Hugo
APPLICANT: Lauvereys, Marc Josef
APPLICANT: Lauvereys, Marc Josef
APPLICANT: George Nore Rene
APPLICANT: George Nore Rene
APPLICANT: George Nore Rene
APPLICANT: George Jozef
APPLICANT: Moyle, Matthew
APPLICANT: Bergum, Peter W
TITLE OF INVENTION: NEMATODE-EXTRACTED SERINE PROTEASE
TITLE OF INVENTION: NEMATODE-EXTRACTED SERINE
TITLE OF INVENTION: PROTEIN
NUMBER OF SEQUENCES: 356
CORRESPONDENCE ADDRESS:
ADDRESSEE: Lyon & Lyon
STURED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: Los Angeles
STATE: California
COUNTRY: U.S.A.
ZIP: 90071
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: storage
COMPUTER: IBM Compatible
OPERATING SYSTEM: IBM P.C. DOS 5.0
FILING DATE: October 17, 1995
APPLICATION NUMBER: 08/486,399
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/486,397
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: October 18, 1994
ATTORNEY/AGENT INFORMATION:
NAME: BIGGS, SUZANNE: 1994
ATTORNEY/AGENT INFORMATION:
NAME: BIGGS, SUZANNE: 30,158
REGISTRATION NUMBER: 30,158
REGISTRATION NUMBER: 30,158
TELEPONMUNICATION INFORMATION:
TELEPHONE: (213) 955-0440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Ancyclostoma caninum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE: Lyon & Lyon
STREET: 633 West Fifth Street
STREET: Suite 4700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: (213) 955-0440
TELEX: 67-3510
INPORMATION FOR SEQ ID NO: 59:
SEQUENCE CHARACTERISTICS:
LENGTH: 84 amino acids
TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: peptide ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          58 KVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62 DKCVSAEDC 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 21; Conserval
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-634-641-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-249-471-59
```

ò g ð g

```
11 KCPSNEIFSRCDGR-CQRFC------PNVVPKPLCIKICAPGCVCRLGYLRNKK 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 25.6%; Score 100; DB 3; Length 84; Best Local Similarity 30.4%; Pred. No. 0.0012; Matches 21; Conservative 8; Mismatches 24; Indels
TITLE OF INVENTION: INHIBITORS AND ANTICOAGULANT TITLE OF INVENTION: PROTEIN NUMBER OF SEQUENCES: 356
CORRESPONDENCE ADDRESS: ADDRESSE: Lyon & Lyon STREET: 633 West Fifth Street STREET: Suite 4700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 59, Application US/08809455
Patent No. 6090916
GENERAL INFORMATION
APPLICANT: Vlasuk, George Phillip
APPLICANT: Stanssens, Patrick Eric Hugo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE:

PRIOR APPLICATION NUMBER: 05/09/249/451

PRILING DATE: 08/09,455

FILING DATE: April 17, 1997

APPLICATION NUMBER: PCT/US95/1321

PILING DATE: COCCODE. 17, 1995

APPLICATION NUMBER: 08/486,399

FILING DATE: Unne 5, 1995

APPLICATION NUMBER: 08/466,397

FILING DATE: Unne 5, 1995

APPLICATION NUMBER: 08/461,965

PILING DATE: Unne 5, 1995

APPLICATION NUMBER: 08/461,965

FILING DATE: Unne 5, 1995

APPLICATION NUMBER: 08/36,110

FILING DATE: OCCODE. 18, 1994

ATTORNEY/AGENT: INFORMATION:

NAME: BIGGS, SUZANDE.

REFERENCE/DOCKET NUMBER: 30.158

REFERENCE/DOCKET NUMBER: 31594
                                                                                                                                                                                                                                                                                                       ZIP: 90071
COMPUTER READBLIB FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: storage
                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM Compatible
OPERATING SYSTEM: IBM P.C. DOS 5.0
SOFTWARE: World Perfect 5.1
CURRENY APPLICATION DATA:
APPLICATION NUMBER: US/09/249,451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Ancyclostoma caninum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELECOMMUNICATION INFORMATION:
TELEPHONE: (213) 489-1600
TELEFAX: (213) 955-0440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEX: 67-3510
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
IENGTH: 84 amino acids
TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY: linear
MOLECULE TYPE: peptide
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        58 KVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62 DKCVSAEDC 70
                                                                                                                                                                                                                 CITY: Los Angeles
STATE: California
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-249-451-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-809-455-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11 KCPSNEIFSRCDGR-CQRFC------PNVVPKPLCIKICAPGCVCRLGYLRNKK 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25.6%; Score 100; DB 3; Length 84; 30.4%; Pred. No. 0.0012; tive 8; Mismatches 24; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Bergum, Peter W. IIILE OF INVENTION: NEMATODE-EXTRACTED SERINE PROTEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Stanssens, Patrick Eric Hugo
Messens, Joris Hilda Lieven
Lauwereys, Marc Josef
Laroche, Yves Rene
Jespers, Laurent Stephane
Ganeemans, Yannick Georges Jozef
Moyle, Matthew
                                                                         COMPUTER READBLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
SOFTWARE: Word Perfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/249,472
FILING DATE: OCCODER 17, 1995
APPLICATION NUMBER: 08/486,397
FILING DATE: OCCODER 17, 1995
APPLICATION NUMBER: 08/486,397
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/465,380
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/466,397
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELEC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Vlasuk, George Phillip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: peptide ORIGINAL SOURCE: ORGANISM: Ancyclostoma caninum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 59, Application US/09249451
Patent No. 6087487
GENERAL INFORMATION:
APPLICANT: Vlasuk, George Philli
APPLICANT: Stanssens, Patrick Er
APPLICANT: Messens, Joris Hilda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 30.4<sup>5</sup>
Matches 21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             : 84 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      58 KVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62 DKCVSAEDC 70
      California : U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: linear
                                                            90071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-249-472-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-249-451-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGIH:
```

ب. ز

ò

ò g

```
25.6%; Score 100; DB 3; Length 84;
30.4%; Pred. No. 0.0012;
tive 8; Mismatches 24; Indels 16; Gaps
                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION: NEMATODE-EXTRACTED SERINE PROTEASE TITLE OF INVENTION: INHIBITORS AND ANTICOAGULANT TITLE OF INVENTION: PROTEIN
                                                                                                                                                                     Lauwereys, Marc Josef
Laroche, Yves Rene
Garsemans, Yamick Georges Jozef
Moyle, Matthew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: storage
COMPUTER: 1BM COMPACIBLE
OPERATING SYSTEM: 1BM P.C. DOS 5.0
SOFTWARE: WOR'D PEFFECT 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/249,461
FILING DATE:
                                                                                                     Vlasuk, George Phillip
Stanssens, Patrick Eric Hugo
Messens, Joris Hilda Lieven
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/809,455
APPLICATION NUMBER: 08/809,455
APPLICATION NUMBER: 08/805/13231
FILING DATE: October 17, 1995
APPLICATION NUMBER: 08/486,399
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/466,380
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/465,380
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/36,110
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/36,110
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/36,110
FILING DATE: June 5, 1995
APPLICATION NUMBER: 216/270
FILING DATE: October 18, 1994
ATTORNEY/AGENT INFORMATION:
REBERENCE/DOCKET NUMBER: 216/270
TELEFAX: (213) 955-0440
TELEFAX: 67-3510
TELEFAX: 67-3510
TELEX: 67-3510
TELEX: 07-3510
TELEX: 07-3510
TELEX: 07-3510
  US-09-249-461-59
; Sequence 59, Application US/09249461
; Patent No. 6096877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; ORGANISM: Ancyclostoma caninum
US-09-249-461-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE: Lyon & Lyon
STREET: 633 West Fifth Street
STREET: Suite 4700
                                                                                                                                                                                                                                                                                                         Bergum, Peter W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 30.49
Matches 21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 84 amino acids TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE: peptide ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
ADDRESSE: Lyon & Ly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: Los Angeles
STATE: California
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16X: U.S.A.
90071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        inear
                                                                                                                                                APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: ami.
TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11 KCPSNEIFSRCDGR-CQRFC------PNVVPKPLCIKICAPGCVCRLGYLRNKK 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Lauwereys, Marc Josef
APPLICANT: Lauwereys, Marc Josef
APPLICANT: Laroche, Yves Rene
APPLICANT: Jespers, Laurent Stephane
APPLICANT: Gansemans, Yannick Georges Jozef
APPLICANT: Moyle, Matthew
APPLICANT: Bergum, Peter W.
TITLE OF INVENTION: INHIBITORS AND ANTICOAGULANT
TITLE OF INVENTION: INHIBITORS AND ANTICOAGULANT
NUMBER OF SEQUENCES: 356
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 25.6%; Score 100; DB 3; Length 84; Best Local Similarity 30.4%; Pred. No. 0.0012; Matches 21; Conservative 8; Mismatches 24; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READBLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: Grarge
COMPUTER.
COMPUTER: 1.8M Compatible
OPERATING SYSTEM: IBM P.C. DOS 5.0
SOFTWARE: Word Perfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/809,455
FILING DATE: APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/13231
FILING DATE: October 17, 1995
APPLICATION NUMBER: 08/486,399
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/466,397
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/46,995
APPLICATION NUMBER: 08/46,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 30,158
REGISTRATION NUMBER: 30,158
REFERENCE/DOCKET NUMBER: 216/270
TELEPHONE: (213) 489-1600
TELEFANX: (213) 955-0440
Messens, Joris Hilda Lieven
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; ORGANISM: Ancyclostoma caninum
US-08-809-455-59
                                                                                                                                                                                                                                                                                               ADDRESSEE: Lyon & Lyon
STREET: 633 West Fifth Street
STREET: Suite 4700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELBFAX: (213) 955-044
TELEX: 67-3510
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  84 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE: peptide ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                 CITY: Los Angeles
STATE: California
COUNTRY: U.S.A.
ZIP: 90071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               58 KVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62 DKCVSAEDC 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
```

---PNVVPKPLCIKICAPGCVCRLGYLRNKK

11 KCPSNEIFSRCDGR-CQRFC--

ઠે

RESULT 14

::

엄

```
US-09-249-448-59
                                                                                                                                                                              ઠે
                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                      ద
5 QCGENEKYDSCGSKECDKKCKYDGVEEEDDEEPNV---PCLVRVCHQDCVCEEGFYRNKD 61
                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Lauwereys, Marc Josef
APPLICANT: Laroche, Yves Rene
APPLICANT: Jespers, Laurent Stephane
APPLICANT: Gansemans, Yannick Georges Jozef
APPLICANT: MOYLE, Matthew
APPLICANT: MOYLE, Matthew
APPLICANT: MOYLE, Matthew
TITLE OF INVENTION: NEMATODE-EXTRACTED SERINE PROTEASE
TITLE OF INVENTION: INHIBITORS AND ANTICOAGULANT
TITLE OF INVENTION: PROTEIN
NUMBER OF SEQUENCES: 356
                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: Vlasuk, George Phillip
APPLICANT: Stanssens, Patrick Eric Hugo
APPLICANT: Messens, Joris Hilda Lieven
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READBLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb MEDIUM TYPE: storage COMPUTER: IBM COMPATIBLE OPERATING SYSTEM: IBM P.C. DOS 5.0 SOFWARE: WORD PERFECT 5.1 CURRENT APPLICATION DATA:
APPLICATION TOWNER: US/09/249,448 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR DATE:
PRIOR DATE:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/809,455
APPLICATION NUMBER: 08/809,455
APPLICATION NUMBER: PCT/US95/13231
FILING DATE: October 17, 1995
APPLICATION NUMBER: 08/466,399
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/466,397
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/466,397
APPLICATION NUMBER: 08/461,965
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/326,110
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/326,110
FILING DATE: JUNE 5, 1994
ATTORNEY/AGENT INFORMATION:
NAME: BIGGS, SUZANNE L.
REGISTRATION NUMBER: 30,158
REFERENCE/DOCKET NUMBER: 316/270
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELEFAX: (213) 955-0440
TELEFAX: 67-3510
INFORMATION FOR SEQ ID NO: 59:
FEATURE OF ARMENDER: ARMENDER: TENDERAY:
TELEFAX: 07-3510
INFORMATION FOR SEQ ID NO: 59:
FEATURE OF ARMENDER: ARMENDER: TENDERAY:
TELEFAX: 07-3510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: amin acid
TOPOLOGY: linear
MCLECULE TYPE: peptide
ORIGINAL SOURCE:
ORGANISM: Ancyclostoma caninum
                                                                                                                                                                                                                                                Sequence 59, Application US/09249448
Patent No. 6121435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
ADDRESSE: Lyon & Lyon
STREET: 633 West Fifth Street
STREET: Suite 4700
CITY: Los Angeles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    84 amino acids
                                                      58 KVCVPRSKC 66
                                                                                                            62 DKCVSAEDC 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: Los Angeles
STATE: California
COUNTRY: U.S.A.
ZIP: 90071
                                                                                                                                                                                            RESULT 15
US-09-249-448-59
                                                                                                         DP
DP
                                                      à
```

```
ä;
                                                                                                                  11 KCPSNEIFSRCDGR-CQRFC------PNVVPKPLCIKICAPGCVCRLGYLRNKK 57
                                                                                                                                                     S QCGENEKYDSCGSKECDKKCKYDGVEEEDDEEPNV---PCLVRVCHQDCVCEEGFYRNKD 61
                                                                   16; Gaps
Query Match 25.6%; Score 100; DB 3; Length 84; Best Local Similarity 30.4%; Pred. No. 0.0012; Matches 21; Conservative 8; Mismatches 24; Indels
                                                                                                                                                                                                                                                                                                                                                                      Search completed: November 17, 2003, 08:10:25 Job time: 23 secs
                                                                                                                                                                                                                            58 KVCVPRSKC 66
                                                                                                                                                                                                                                                                                 62 DKCVSAEDC 70
```

```
November 17, 2003, 08:14:08; Search time 20 Seconds (without alignments) 322.165 Million cell updates/sec
                                                                                                                                                                                    US-09-506-978-1
391
1 GGFGGLGGRCKCPSNEIFSR.....CRLGYLRNKKKVCVPRSKCG 67
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                      283308 seqs, 96168682 residues
                                                                   OM protein - protein search, using sw model
                                                                                                                                                                                                                                                               BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                  Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                          Run on:
```

19406

Minimum DB seq length: 0 Maximum DB seq length: 67

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution. Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries PIR 76:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:* Database :

	Description	chymotrypsin/elast	chymotrypsin/elast	trypsin inhibitor	metallothionein -	metallothionein B	metallothionein -	metallothionein 4	metallothionein IV	metallothionein 2	metallothionein-2c	llothionein		metallothionein 1A	metallothionein A	metallothionein 1	metallothionein 1B	metallothionein 1R		metallothionein 1		metallothionein II	metallothionein Ia		metallothionein -	metallothionein T	metallothionein 1H	metallothionein-1	metallothionein Ic	
SUMMARIES	ID	807127	S08572	835098	S31723	B27490	\$30567	A53640	B53640	A37425	S54335	S54336	A23889	SMHU1A	JC1449	865712	SMHU1B	869277	808190	A34905	JC2420	SMB02	500808	800809	A38739	SMMSI	847651	I54574	8	SMH01A
	ngth DB	:																61 2												
de	Query Match Length	6	ę,	18.0	7.	۲.	•	17.1	•	15.9	ഗ	15.9	ഗ	Ľ	ß	Ŋ	S	15.2	n	15.2	15.1	ഗ	'n.	15.1	S	S	15.0	15.0		14.7
	Score	80.5	77.5	70.5	69	69	68	67	65	62	62	62		60.5			σ	59.5	o	ΟN	ი	59	29	50		œ	58.5	മ		57.5
	Result No.	н	7	m	4	ις.	9	7	c o	თ	10	11	12	13	14	15	16	17	18	19	20	21	55	23	24	25	26	27	28	29

57.5 14.7 60 2 83833 57.5 14.7 61 1 8MHUD 57.5 14.7 61 2 84765 56.5 14.5 61 1 8MHUZ 56.5 14.5 61 1 8MHUZ 56.5 14.5 61 1 8MHUZ 56.5 14.5 61 1 8MHUZ 56.5 14.2 61 1 8MHUZ 56.1 14.2 61 1 8MHUZ 56.1 14.2 61 1 8MHUZ 57.5 14.2 61 1 8MHUZ 57.5 14.2 61 1 8MHUZ 57.5 14.2 61 1 8MHUZ 57.5 14.2 61 1 8MHUZ 57.5 13.9 61 2 8MHUZ 57.5 13.9 61 2 14811 57.5 14811 57.5	metallothionein - metallothionein 1E metallothionein 1B metallothionein 1X metallothionein 2 metallothionein 2 metallothionein 1F metallothionein 1A metallothionein 1A metallothionein 1A metallothionein 1A metallothionein 1I metallothionein 1I metallothionein 1I metallothionein 1I metallothionein 1I metallothionein 1I metallothionein 1I metallothionein 1I metallothionein 1I metallothionein 1I	ALIGNMENTS common roundworm sion 19-Mar-1997 #text_change 24-Jul-1997 s, S.M. st. 1984 ctrypsin/elastase from Ascaris lumbricoides: the pr 4255715; PMID:6564898	re 80.5; DB 2; Length 63; d. No. 0.23; Mismatches 23; Indels 13; Gaps 4;QRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC 60	common roundworm sion 19-Mar-1997 #Lext_change 31-Oct-1997 s, S.M. 61, 1984 otrypsin/elastase from Ascaris lumbricoides: the pr 4255715; PMID:6564898 nhibitor Score 77.5; DB 2; Length 63; Pred. No. 0.45; i Mismatches 32; Indels 3; Gaps 2; CPNVVPRPLCIKICAPGCVCRLGYLRNKKKVCVPRSKC 66	, rv
30 57.5 14.7 60 2 31 57.5 14.7 61 1 32 57.5 14.7 61 1 34 56.5 14.7 61 1 35 56.5 14.5 61 1 37 56.5 14.5 61 1 38 56.5 14.5 61 1 39 56.5 14.5 61 1 30 66.5 14.5 61 1 31 56.5 14.5 61 1 32 56.5 14.2 61 1 32 56.5 14.2 61 1 32 56.5 14.2 61 1 32 61 2 41 54.5 13.9 61 2 42 54.5 13.9 61 2 43 54.5 13.9 61 2 44 54.5 13.9 61 2 45 54.5 13.9 61 2 46 54.5 13.9 61 2 47 54.5 13.9 61 2 48 54.5 13.9 61 2 49 54.5 13.9 61 2 40 54.5 13.9 61 2 41 54.5 13.9 61 2 42 54.5 13.9 61 2 43 54.5 13.9 61 2 44 54.5 13.9 61 2 45 54.5 13.9 61 2 46 54.5 13.9 61 2 47 54.5 13.9 61 2 48 54.5 13.9 61 2 49 54.5 13.9 61 2 40 54.5 13.9 61 2 41 54.5 13.9 61 2 42 54.5 13.9 61 2 43 54.5 13.9 61 2 44 54.5 13.9 61 2 45 54.5 13.9 61 2 46 54.5 13.9 61 2 47 54.5 13.9 61 2 48 54.5 13.9 61 2 49 54.5 13.9 61 2 49 54.5 13.9 61 2 40 54.5 13.9 61 2 41 54.5 13.9 61 2 42 54.5 13.9 61 2 43 54.5 13.9 61 2 44 54.5 13.9 61 2 45 54.5 13.9 61 2 47 54.5 13.9 61 2 48 54.5 13.9 61 2 49 61 2	S38335 SMHU1E SMHOB SAFROB SMHU2 SMHU2 SMWKZ SMWRI A33825 SMRT1 A25775 G014775 G014775 H2116	ALIGN COMMON COMMON rision 19 Os, S.M. 161, 198 motrypsi 84255715	Score 8 Pred. N 0; Mism RCOR :	common : ision 19 55, S.M. 161, 198 motrypsii 34255715 Rhibitor Fred. Nc 77 Pred. Nc	CCGODENTE
33 57.5 14.7 60 34 57.5 14.7 61 34 56.5 14.7 61 34 56.5 14.7 61 34 56.5 14.5 61 35 66.5 14.5 61 36 56.5 14.5 61 37 56.5 14.5 61 38 56.5 14.5 61 39 61 44 56.5 14.3 64 41 54.5 13.9 61 44 54.5 13.9 61 44 54.5 13.9 61 44 54.5 13.9 61 45 54.5 13.9 61 46 54.5 13.9 61 47 54.5 13.9 61 48 54.5 13.9 61 49 54.5 13.9 61 49 54.5 13.9 61 40 54.5 13.9 61 41 54.5 13.9 61 42 54.5 13.9 61 43 54.5 13.9 61 44 54.5 13.9 61 45 54.5 13.9 61 46 54.5 13.9 61 47 54.5 13.9 61 48 54.5 13.9 61 49 54.5 13.9 61 49 54.5 13.9 61 40 54.5 13.9 61 41 54.5 13.9 61 42 54.5 13.9 61 43 54.5 13.9 61 44 54.5 13.9 61 45 54.5 13.9 61 46 54.5 13.9 61 47 54.5 13.9 61 48 54.5 13.9 61 49 54.5 13.9 61 49 54.5 13.9 61 40 54.5 13.9 61 41 54.5 13.9 61 42 54.5 13.9 61 43 54.5 13.9 61 44 54.5 13.9 61 45 54.5 13.9 61 46 54.5 13.9 61 47 54.5 13.9 61 48 6660000000000000000000000000000000000		r - Go Go Chy ID:	CEM 1	r	ELI
33 57.5 14.7 33 25.5. 14.7 33 25.5. 14.7 34 56.5 14.5 35 56.5 14.5 36 56.5 14.5 37 56.5 14.2 39 56.5 14.3 39 56.5 14.3 39 64.5 14.3 39 64.5 14.3 39 64.5 13.9 44 54.5 13.9 44 54.5 13.9 44 54.5 13.9 44 54.5 13.9 44 54.5 13.9 45 54.5 13.9 46 54.5 13.9 47 54.5 13.9 48 54.5 13.9 48 54.5 13.9 49 54.5 13.9 40 54.5 13.9 41 54.5 13.9 42 54.5 13.9 43 54.5 13.9 44 54.5 13.9 45 54.5 13.9 46 54.5 13.9 47 54.5 13.9 48 54.5 13.9 48 54.5 13.9 49 54.5 13.9 41 54.5 13.9 42 54.5 13.9 43 54.5 13.9 44 54.5 13.9 45 54.5 13.9 46 54.5 13.9 47 54.5 13.9 48 68 68 68 68 68 68 68 68 68 68 68 68 68	60 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	nhibito ricoide quence_ , R.J.; 232, 1 232, 1 127; MU	20.6 30.3 vative IFSRCDG :::	hhibito ricoidee Tuence 1 232, 1 ors of 127; MU 127; MU 19.88 31.74 ative	: TECTG-0
33 57.5 33 2 57.5 33 2 57.5 33 2 57.5 33 3 2 57.5 33 3 57.5 33 56.5 33 8 56.5 33 8 56.5 34 56.5 41 54.5 44 54.5 44 54.5 44 54.5 45 54.5 46 54.5 47 54.5 48 61 V Cession: So atus: prelii lecule type st Local Sin ches: 19-Mar-1 ches: 20; ches: 20; ches: 20; ches: 20; ches: 20; ches: 20; ches: 20; ches: 20; ches: 20; ches: 19-Mar-1 ches: 20; ches:	4444444444	astase i ris lumb 7127 #se 7127 #se Peanasky Blophibir 61127 7127 ninary i proteii 3 sabs	nilarity Conser KGKCPSNE : DESCGPNE PRSKC 66	satase in lumbi seanasky. Seanasky. Siophys. Sinhibitcon seanasky. Sinhibitcon seanasky. Sinhibitcon seanasky. Sinhibitcon seanasky. Sea	PCGKNEV
33.3 33.3 33.3 33.3 33.3 33.4 33.4 33.4	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	psin/ell s: Asca. 19. Mar-ion: Sol lon: Sol lon: Sol ochem: The is The is The is ochem: prelif is prelif le type es: 1-66	Match Sil Sil Sil Sil Sil Sil Sil Sil Sil Sil	pein/ell B: Ascal 10-Mar-1 10-Mar-1 10-Mar-1 D.R.; E Cohem. E The inge 10-Mar-1 10-Mar-	1 RK
RESULT SO TILL	шшшшшшшшшшафафа Очишшшшшшшшафафафа Очишшшшшшшшшшшшшшшшшшшшшшшшшшшшшшшшшшшш	RESULT 1 S07127 Chymotry Chymotry C,Specie C,Becie C,Access R;Babin, Arth. Bi A;Tath. A;Refere A;Access A;Access A;Access A;Access A;Access A;Access A;Access	Query M Best Lo Matches Qy Db Qy	RESULT 2 SOB572 chymotryp C.Species C.Jacesic C.Accesic R.Babin, A.Title: A.Accessic A.Accessic A.Accessic A.Residue C.Superfa Query M Best Lo Matches	ପୁପ

```
C;Accession: A30818; B27490; S16997; S15509
R;Zafarullah, M.; Bonham, K.; Gedamu, L.
R;Zafarullah, M.; Bonham, K.; Gedamu, L.
A; Cell. Biol. 8, 449-4476, 1988
A;Title: Structure of the rainbow trout metallothionein B gene and characterization careference number: A30818; MUID:89039876; PMID:3185557
                                                                                                                                                                                                                                                                                                                     cloning and characterization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Aftorsereferences: GB.M18104; NID:g213816; PIDN:AAA49566.1; PID:g213817
R.Kille, P.; Stephens, P.E.; Kay, J.
Biochim. Blophys. Act 1089, 407-410, 1991
A.Title: Elucidation of 20NA sequences for metallothioneins from rainbow trout, stone A, Reference number: S16996; MUID:91316146; PMID:1859844
A, Accession: S16996; MUID:91316146; PMID:1859844
A, Rotaus: preliminary
A, Molecule type: mRNA
A, Kross-references: ENBL:X59394; NID:g64332; PIDN:CAA42037.1; PID:g64333
C, Superfamily: metallothionein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Species: Homo sapiens (man)
C;Date: 05-Jan-1996 #sequence_revision 05-Jan-1996 #text_change 03-Dec-1999
C;Date: 05-Jan-1996 #sequence_revision 05-Jan-1996 #text_change 03-Dec-1999
C;Accession: A53640
R;Quaife, C.J.; Findley, S.D.; Erickson, J.C.; Froelick, G.J.; Kelly, E.J.; Zambrowic Biochemistry 33, 7250-7259, 1994
Biochemistry 33, 7250-7259, 1994
A;Title: Induction of a new metallothionein isoform (MT-IV) occurs during differentic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ب
س
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ë,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C;Species: Pleuronectes platessa (plaice)
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                           A;Cross-references: GB:M18104; NID:g213816; PIDN:AAA49566.1; PID:g213817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: EMBL:X56743; NID:g64237; PIDN:CAA40067.1; PID:g64238 C;Superfamily: metallothionein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7 GGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15 GGSCKC-SNCACTSCKKSCCPCCPSDCSK-----CASGCVC-----KGKTC 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7 GGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15 GGSCTC-KNCSCTTCNKSCCPCCPSGCPK-----CASGCVC-----KGKTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17.4%; Score 68; DB 2; Length 60; 35.2%; Pred. No. 3.7; Live 3; Mismatches 18; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                  RiBonham, K.; Zafarullah, M.; Gedamu, L.
DNA 6, 519-528, 1987
A;Title: The rainbow trout metallothioneins: molecular c
A;Reference number: A27490; MUID:88111026; PMID:2448099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Accession: S30567
R;Leaver, M.J.; George, S.G.
submitted to the EMBL Data Library, November 1990
A;Reference number: S30567
A;Accession: S30567
A;Status: preliminary
A;Moleule type: mRNA
A;Residues: 1-60 < LEA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 69; DB 2
Pred. No. 3;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N;Alternate names: metallothionein IV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ch 17.6%;
1 Similarity 37.0%;
20; Conservative 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity 35.2
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                metallothionein 4 - human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         metallothionein - plaice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                             A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-60 <BON>
                                                                                                                                                                       A; Molecule type: DNA
A; Residues: 1-60 <ZAF>
                                                                                                                                                                                                                                                                                                                                                                      A; Accession: B27490
                                                                                                                                             A; Accession: A30818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: DNA
A; Residues: 1-60 < KI3>
A; Residues: 1-60 < KI3>
A; Cross-references: EMBL:X70042; NID:g62782; PIDN:CAA49636.1; PID:g62783
A; Cross-references: EMBL:X70042; NID:g62782; PIDN:CAA49636.1; PID:g62783
A; Note: the authors translated the codon ACT for residue 9 as Ser
B; Kille, P.; Stephens, P.E.; Kay, J.
Biochim. Biophys. Acta 1089, 407-410, 1991
A; Title: Elucidation of CDNA sequences for metallothioneins from rainbow trout, stone lo
                                                                                                                                                                                                                                                                                  structure determination of the Ag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11 KCPS-NEIFSRCDGRCQRFC-PNVVPKPLCIKICAP---GCVCRLGYLRNKKKVCVPRSK 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      trypsin inhibitor - pig roundworm
C;Species: Ascaris suum (pig roundworm)
C;Date: 19-Mar_1997 #sequence_revision 19-Mar-1997 #text_change 31-Oct-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         metallothionein B - rainbow trout
C;Species: Or.gorhynchus mykiss (rainbow trout)
C;Date: 18-Jul-1988 #sequence_revision 18-Jul-1988 #text_change 20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: EMBL:X59392; NID:g62780; PIDN:CAA42035.1; PID:g62781 C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7 GGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGSCKC-SNCACTSCKKSCCSCCPSGCSK-----CASGCIC-----KGKTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 2; Length 62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ch 17.6%; Score 69; DB 2; Length 60; I Similarity 35.2%; Pred. No. 3; 19; Conservative 3; Mismatches 18; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Introns: 9/1; 31/1
C;Superfamily: metallothionein
C;Keywords: chelation; metal binding; metal-thiolate cluster
                                                                                                                                                                                   C,Accession: 335098
R;Gronenborn, A.M.; Nilges, M.; Peanasky, R.J.; Clore, G.M. Biochmistry 29, 183-189, 1990
A;Title: Sequential resonance assignment and secondary stru A;Reference number: 335098; MUID:90212567; PMID:2322539
A;Status: pretliminary
A;Molecule type: protein
A;Residues: 1-62 <GRO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18.0%; Score 70.5; DE 29.5%; Pred. No. 2.2; ive 12; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                           C; Superfamily: roundworm trypsin inhibitor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 29.5
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: mRNA
A; Residues: 1-60 <KIL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Accession: S38334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Accession: S17175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ç.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99 C 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
```

m

ò qq

```
A23889

metallothionein 1 - bovine (tentative sequence)
C;Species: Bos primigenius taurus (cattle)
C;Date: 07-Mar-1988 #sequence_revision 07-Mar-1988 #text_change 28-Apr-1995
C;Accession: A23889
R;Munger, K.; Germann, U.A.; Beltramini, M.; Niedermann, D.; Baitella-Eberle, G.; Kag J. Biol. Chem. 260, 10032-10038, 1985
A;Title: (Cu,Zn)-metallothioneins from fetal bovine liver. Chemical and spectroscopic A;Reference number: A92490; MUID:85261416; PMID:4019500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ë,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gracial Othionein-2a - rabbit
C.Species: Oryctolagus cuniculus (domestic rabbit)
C.Species: Oryctolagus cuniculus (domestic rabbit)
C.Species: Oryctolagus cuniculus (domestic rabbit)
C.Species: Oct.-1995 #sequence_revision 03-Nov-1995 #text_change 07-May-1999
C.Accession: S54336
R.Hunziker, P.E.; Kaur, P.; Wan, M.; Kaenzig, A.
Biochem. U. 3. 306, 265-270, 1995
A.Fitle: Primary structures of seven metallothioneins from rabbit tissue.
A.Reference number: S54331; MUID:95169065; PMID:7864820
A.Status: preliminary
A.Status: protein
A.Residues: 1-62 - HUN>
C.Superfamily: metallothionein
                                                                                                                                                                                                     #text_change 07-May-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                C;Accession: S54335
R;Hunziker, P.E.; Kaur, P.; Wan, M.; Kaenzig, A.
Biochem. J. 306, 265-270, 1995
A;Title: Primary structures of seven metallothioneins from rabbit tissue.
A;Reference number: S54331; MUID:95169065; PMID:7864820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCR 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15.9%; Score 62; DB 2; Length 62; ilarity 38.5%; Pred. No. 15; Conservative 2; Mismatches 10; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15.9%; Score 62; DB 2; Length 62; 38.5%; Pred. No. 15; cive 2; Mismatches 10; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19; Indels
             25 KCTS-----CKKSCCSCCP-----PGCAK-CAQGCICK 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11 KCPSNEIFSRCDGRCORFCPNVVPKPLCIKICAPGCVCR 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26 KCTS-----CKKSCCSCCP----PGCAK-CAQGCICK 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26 KCTS-----CKKSCCSCCP-----PGCAK-CAQGCICK 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11 KCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCR 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 2;
                                                                                                                                        metallothionein-2c - rabbit
C;Species: Oryctolagus cuniculus (domestic rabbit)
C;Date: 27-Oct-1995 #sequence_revision 03-Nov-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 61.5; DB Pred. No. 16; 5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15.7%;
                                                                                                                                                                                                                                                                                                                                                                          A;Status: preliminary
A;Molecule type: protein
Residues: 1-62 - HUN>
C;Superfamily: metallothionein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A,Molecule type: protein
A,Residues: 1-61 <MUN>
C,Superfamily: metallothionein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 38.57
Matches 15, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 36.7°
Matches 18, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ouery Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                     A; Accession: S54335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Species: Miss musculus (house mouse)
C;Species: Miss musculus (house mouse)
C;Date: 05-Jan-1996 #sequence_revision 05-Jan-1996 #text_change 20-Aug-1999
C;Accession: B53640
B;Quaife, C;J.; Findley, S;D.; Erickson, J.C.; Froelick, G.J.; Kelly, E.J.; Zambrowicz, A;Title: Induction of a new metallothionein isoform (MT-IV) occurs during differentiatic A;Reference number: A53640; MUID:94271779; PMID:8003488
A;Accession: B53640
A;Retare preliminary
A;Molecule type: DNA
A;Residues: 1-62 <QUA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           metallothionein 2 - rabbit
C;Species: Oryctolagus cuniculus (domestic rabbit)
C;Date: 30-Sep-1993 #sequence_revision 30-Sep-1993 #text_change 07-May-1999
C;Accession: A37425
R;Wagner, G.; Neuhaus, D.; Woergoetter, E.; Vasak, M.; Kaegi, J.H.R.; Wuethrich, K.
Bur. J Biocohem. 157, 275-289, 1986
A;Title: Sequence-specific (1)H-NWR assignments in rabbit-liver metallothionein-2.
A;Reference number: A37425; MUID:86220204; PMID:3709538
                                                                                                                                                                                                                                                                                                                          4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKVC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                             7 GGRGKCPSNEIFSRCDGR-CQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVP 62
                                                                                                                                                                                                                                                                                                                                                                                             11 GGICMCGDNCKCTTCNCKTCRKSCCPCCP-PGCAK-CARGCICKGG---SDKCSCCP 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11 GGICICGDNCKCTTCSC-KTCKKSCCPCCP----PGCAK-CARGCICKGG---SDKCSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                          A;Cross-references: GB:U07807; NID:g466264; PIDN:AAA20232.1; PID:g516535 C;Genetics: A;Introns: 11/1; 33/1 C;Superfamily: metallothionein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: GB:U07808; NID:g466266; PIDN:AAA20233.1; PID:g516536 C;Genetics: A;Introns: 11/1; 33/1 C;Superfamily: metallothionein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12;
                                                                                                                                                                                                                                                          ch 17.1%; Score 67; DB 2; Length 62; l Similarity 35.1%; Pred. No. 4.8; 20; Conservative 8; Mismatches 23; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     h 16.6%; Score 65; DB 2; Length 62; Similarity 33.9%; Pred. No. 7.5; 21; Conservative 4; Mismatches 27; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15.9%; Score 62; DB 2; Length 61; larity 38.5%; Pred. No. 15; Conservative 2; Mismatches 10; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11 KCPSNEIFSRCDGRCORFCPNVVPKPLCIKICAPGCVCR 49
A; Reference number: A53640; MUID: 94271779; PMID: 8003488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Status: preliminary
A;Molecule type: protein
A;Residues: 1-61 <WAG>
C;Superfamily: metallothionein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             metallothionein IV - mouse
                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 15; Conservat
                                             A,Status: preliminary
A,Molecule type: DNA
A,Residues: 1-62 < QUA>
                                A,Accession: A53640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 VP 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CP 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
```

g ò g

ò

à

a

ä

```
Descriptatione of the state of 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6; Gaps
                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                            7 GGRGKCPSNEIFSRCDGRCQRPCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15 ĠĠSCKĊSNCACTŚCKKASĊCDCĊPSGCSK-----ĊASĠĊVĊ-----KGKŢĊ
                                                                                                                                                                   Query Match 15.5%; Score 60.5; DB 2; Length 61; Best Local Similarity 33.3%; Pred. No. 21; Matches 18; Conservative 2; Mismatches 21; Indels 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 15.3%; Score 60; DB 2; Length 52; Best Local Similarity 34.9%; Pred. No. 20; Matches 15; Conservative 2; Mismatches 20; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7 GGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCR 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 GGSCTCSSSCGCKNCKKSCCSCCPVGCSK----CAQGCVCK 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Search completed: November 17, 2003, 08:17:24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A,Status: preliminary
A,Molecule type: protein
A;Residues: 1-23;24-46;47-52 <SAI>
C;Superfamily: metallothionein
C;Keywords: blocked amino end
C; Superfamily: metallothionein
                                                    C; Keywords: metal binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Job time : 20 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                              SwHold metallothionein 1A - human
C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Structural sapiens (man)
A;Reference number: A24502; MUID:84205649; PMID:6327055
A;Molecule type: DNA
A;Reference number: A24502; MUID:84205649; PMID:6327055
A;Molecule type: DNA
A;Residues: 1-61 cRIC>
A;Molecule type: DNA
A;Residues: 1-61 cRIC>
A;Molecule type: CB:K01383; NID:G187536; PIDN:AAA59586.1; PID:g386864
C;Genetics: GB:K01383; NID:G187536; PIDN:AAA59586.1; PID:g386864
A;Genetics: GB:MTIA; MTI
A;Cross-references: GB:L2559; CMIM:156350
A;Map position: 16413-16413
A;Introns: 10/1; 32/1
C;Superfamily: metallothionein
C;Keywords: acetylated amino end; chelation; metal binding; metal-thiolate cluster
F;1-29/Domain: alpha <ALP>
F;1-29/Domain: alpha <ALP>
F;1-29/Domain: alpha <ALP>
F;1-29/Domain: alpha <ALP>
F;1-29/Domain: alpha <ALP>
F;1-29/Domain: alpha <ALP>
F;1-29/Domain: alpha <ALP>
F;1-29/Domain: alpha <ALP>
F;1-29/Domain: alpha <ALP>
F;1-29/Domain: alpha <ALP
F;1-29/Domain: alpha <ALP
F;1-29/Domain: alpha <ALP
F;1-29/Domain: alpha <ALP
F;1-29/Domain: alpha <ALP
F;1-29/Domain: alpha <ALP
F;1-29/Domain: alpha <ALP
F;1-29/Domain: alpha <ALP
F;1-29/Domain: alpha <ALP
F;1-29/Domain: alpha <ALP
F;1-29/Domain: alpha <ALP
F;1-29/Domain: alpha <ALP
F;1-29/Domain: alpha <ALP
F;1-29/Domain: alpha <ALP
F;1-29/Domain: alpha <ALP
F;1-29/Domain: alpha <ALP
F;1-29/Domain: alpha <ALP
F;1-29/Domain: alpha <ALP
F;1-29/Domain: alpha <ALP
F;23.34,36,37,41,44,48,50,57,59,60/Binding site: transition metal ions (Cys) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rikille, P.; Stephens, P.E.; Kay, J.
Biochim. Biophys. Acta 1089, 407-410, 1991
A/Title: Elucidation of cDNA sequences for metallothioneins from rainbow trout, stone ld A/Reference number: S16996; MUID:91316146; PMID:1859844
A/Accession: S16996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: GB:M81800; NID:g213812; PIDN:AAA49564.1; PID:g213813
R;Bonham, K.; Zafarullah, M.; Gedamu, L.
R;Bonham, K.; 519-528, 1987
A;Title: The rainbow trout metallothioneins: molecular cloning and characterization of A;Reference number: A27490; MUID:88111026; PMID:2448099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     metallothionein A - rainbow trout
C;Species: Oncorhynchus myKiss (rainbow trout)
C;Species: Oncorhynchus myKiss (rainbow trout)
C;Date: 30-Sep-1993 #sequence_revision 30-Sep-1993 #text_change 20-Aug-1999
C;Accession: JC1449; A27490; S16996; S15508
R;Hong, Y.; Schartl, M.
Gene 120, 277-279, 1992
A;File: Structure of the rainbow trout metallothionein A gene.
A;Reference number: JC1449; MUID:93013046; PMID:1398141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Molecule type: mRNA
A;Residues: 1-61 <BON>
A;Cross-references: GB:M18103; NID:g213814; PIDN:AAA49565.1; PID:g213815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Molecule type: mRNA
A;Residues: 1-61 <KIL>
A;Cross-Yeferences: EMBL:X59395; NID:g64330; PIDN:CAA42038.1; PID:g64331
10 GGSCTCAGSCKCKA----CRCPS-CKKSCCSCCPVG-CAK-CAQGCVCK 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 15.5%; Score 60.5; DB 1; Length 61; Best Local Similarity 35.0%; Pred. No. 21; Matches 14; Conservative 7; Mismatches 14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17 GSCKCKE--CKCNS-CKKSCCSCCPMS-CAK-CAQGCICK 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10 GKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCR 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A, Accession: JC1449
A, Molecule type: DNA
A, Residues: 1-61 <HON>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Introns: 9/2; 32/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Accession: A27490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Gene: tMT-A
```

g

à

```
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
```

OM protein - protein search, using sw model

November 17, 2003, 08:10:28 ; Search time 11 Seconds (without alignments) 286.435 Million cell updates/sec Run on:

US-09-506-978-1 391 1 GGFGGLGGRCKCPSNEIFSR......CRLGYLRNKKKVCVPRSKCG Perfect score: Sequence:

BLOSUM62 Scoring table:

Gapop 10.0 , Gapext 0.5

127863 segs, 47026705 residues Searched:

6867

Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 67

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt_41:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	Description			ascari						٠.			P52720 salmo salar	P52728 zoarces viv									P09861 oncorhynchu	pagru		Q93083 homo sapien					_	σ.	Ω.	~
SUMMERIES	ID	AMCI_APIME	ICEL ASCSU	ICE2_ASCSU	MT PERFL	ITRI ASCSU	MTB ONCMY	MT ESOLU	MT_PLEPL	MT_PSEAM	MT4 HUMAN	MT BALMY	MTB SALSA	MT ZOAVI	MT4 MOUSE	MT AMBME	MT4 CANFA	MT2A_RABIT	MT2C RABIT	MT1_BOVIN	MT1A HUMAN	MT2 STECO	MTA ONCMY	MT_PAGMA	MTIB HUMAN	MIIR HUMAN	MT2 CANFA	MT2 CAEEL	MT1_COLLI	MTB_CHAAC	MTB CHIHA	MTB_DICLA	MTB PAGBE	MT_LIZAU
	DB	1								Н		Н	٦	-	Н	Н																Н		
	Length	99	63	65	9	62	60	60	9	09																						9	9	09
ako (Query Match	. 9	20.6	0	18.7	8	17.6	17.6	17.4	17.4	~	^	ø	9	9	9	ø	'n	S	S	S	S	15.5	S	15.2	15.2	15.2	15.2	15.2	15.1	15.1	15.1	15.1	15.1
	Score	104.5	80.5	78.5	73	70.5	69	69	69	89	67	66.5	99	65	65	63.5	62.5	62	62	61.5	60.5	60.5	60.5		o	59.5	O	Ç.	ŲΛ	59	59	59	29	59
	Result No.		7	٣	4	S	9	7	æ	6	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33

P52726 oreochromis P04356 bos taurus P04356 bos taurus P04377 ovis aries Q27287 strongyloce Q9bqn2 homo sapien P0204 cyprinodon P80294 homo sapien P02802 mus musculu 01358 chionodraco 073314 notothenia P52721 thermarces
MT OREMO MTIA BOVIN MTIB SHEEP MTB STREU CTCT HUMAN MTA THUMAN MTI MOUSE MTA CHIHA MTA NOUCO MTA PAGBE
нанананана
000000000000000000000000000000000000000
2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
N N N N N N N N N N N N N N N N N N N
#

ALIGNMENTS

```
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 ECGPNEVFNTCGSACAPTCAQ--PKTRICTMQCRIGCQCQEGFLRNGEGACVLPENC 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE=Hemolymph;

**REDLINE=9939955; PubMed=10411628;

**REDLINE=9939955; PubMed=10411628;

**REDLINE=9939955; PubMed=10411628;

**Bania J.*, Stachowiak D., Polanowski A.;

**Inhibitor from the larval hemolymph of Apis mellifera.";

**Inhibitor 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11 KCPSNEIFSRCDGRCQRFCPNVVPKP-LCIKICAPGCVCRLGYLRNKKKVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                       15-JUL-1999 (Rel. 38, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
Chymotrypsin inhibitor (AMCI)
Apis mellifera (Honeybee).
Bukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neopera; Endopterygota; Hymenoptera; Apocrita; Apoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26.7%; Score 104.5; DB 1; Length 56; 36.8%; Pred. No. 5.8e-05; cive 7; Mismatches 26; Indels 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  092B2815AE6B2B7F CRC64;
                                               56 A.A.
                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE, AND STRUCTURE BY NMR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5973 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 36.00
The 21; Conservative
                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       56 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=7460;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       388 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Apidae; Apis.
                                          AMCI APIME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAND
                                                                                     P56682;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAND
AMCI_APIME
                                                                                          SOLUTION OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE ST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
```

RESULT 2 ICEL_ASCSU

DB 1;

```
20.6%; Score 80.5; 30.3%; Pred. No. 0.0
       Query Match
Best Local Similarity 30.3%
Marches 20; Conservative
                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Metallothionein (MT)
                                                                                            61 VPRSKC 66
                                                                                                        :| |:|
55 IPASQC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            65 AA;
                                                                                                                                                                                                                                                             NCBI_TaxID=6253;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              64
65
65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Simi
                                                                                                                                                                                       01-AUG-1988
                                                                                                                                                                   CE2 ASCSU
                                                                                                                                                                                                                                                                                                                                                                                                                              DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MT_PERFL
P52725;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACT SITE
VARĪANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        σ
                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VARIANT
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VARIANT
                                                                                                                                                          ICE2_ASCSU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Loca
Matches
                                                                                                                                                RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 4
                                                     à
                                                                                                                                                                             윉
                                                                                             ઠે
                                                                                                              원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠ
                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
      PO7851, 077419;
01-AUG-1988 (Rel. 08, Created)
01-AUG-1988 (Rel. 08, Last sequence update)
01-AUG-1988 (Rel. 08, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
Chymotrypsin/elastase isoinhibitor 1 (C/E-1 inhibitor) (AsC/E-1).
Ascaris suum (Pig roundworm) (Ascaris lumbricoides).
Eukaryota; Metazoa; Nematoda; Chromadorea; Ascarididae; Ascaridoidea;
NCBI_TaxID=6253;
                                                                                                                                                                                 SEQUENCE FROM N.A.
MEDLINB=98297373; PubMed=9635450;
Lu C.C., Nguyen T., Morris S., Hill D., Sakanari J.A.;
Halisakis simplex: mutational bursts in the reactive site centers of serine protease inhibitors from an ascarid nematode.";
Exp. Parasitol. 89:257-261(1998).
                                                                                                                                                                                                                                                       X-RAY CRYSTALLOGRAPHY (2.4 ANGSTROMS) OF COMPLEX WITH ELASTASE. MEDLINE=95006335; PubMed=7922044; Huang K., Strynadka N.C., Bernard V.D., Peanasky R.J., James M.N.; "The molecular structure of the complex of Ascaris chymotrypsin/elastase inhibitor with porcine elastase."; Structure 2:679-689[1994].
                                                                                                                                                                                                                                                                                                                    -!- FUNCTION: Defend the organism against the host's proteinases.
-!- SUBCELLUMAR LOCATION: Secreted.
-!- SIMILARITY: Contains 1 TIL (Trypsin inhibitory-like) domain.
                                                                                                                                Babin D.R., Peanasky R.J., Goos S.M.,
"The isoinhibitors of chymotrypsin/elastase from Ascaris
lumbricoides: the primary structure.";
Arch. Biochem. Biophys. 232:143-161(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5DC10DE75B375F16 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -> R (IN REF. 2).
  63 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REACTIVE BOND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Serine protease inhibitor; 3D-structure. DOMAIN 5 60 TIL.
                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL, U94499; AAC61300.1; -. PDB; 1EA1; 05-APR-99. InterPro; IPR002919; TIL_Cysrich. Pfan; PP01826; TIL, T
                                                                                                                       MEDLINE=84255715; PubMed=6564898;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ММ,
 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           824444448
824666444448
8446468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   63 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFID
DISULFID
ACT SITE
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAND
HELIX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               URN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TURN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CRN
```

```
4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2;
                                                           8 GRGKCPSNEIFSRCDG---RC----QRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC 60
                                                                                                       54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCR--LGYLRNKKKVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      59
                                                                                     13; Gaps
                                                                                                                                                                                                                                                                                                                                                        01-AUG-1988 (Rel. 08, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
Chymotrypsin/elastase isoinhibitors 2 to 5.
Ascaris suum (Pig roundworm) (Ascaris lumbricoides).
Bukaryota; Mecazoa; Nematoda; Chromadorea; Ascarididae; Ascaridoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Babin D.R., Peanasky R.J., Goos S.M.;
"The isoinhibitors of chymotrypsin/elastase from Ascaris
lumbricoides: the primary structure.";
Arch. Biochem. Biophys. 232:143-161(1984).
-!- FUNCTION: Defend the organism against the host's proteinases.
-!- SUBCELDULAR LOCATION: Secreted.
-!- SIMILARITY: Contains 1 TIL (Trypsin inhibitory-like) domain.
HSSP; P07851; 12A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      K -> N (IN INHIBITOR 2 AND 4).
T -> S (IN INHIBITOR 2 AND 4).
MISSING (IN INHIBITOR 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 78.5; DB 1; Length 65;
Pred. No. 0.04;
6; Mismatches 32; Indels
Pred. No. 0.024;
10; Mismatches 23; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 K -> E (IN INHIBITOR 3)
K -> R.
B4E51CA166EA4BE3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-0CT-1996 (Rel. 34, Created)
01-0CT-1996 (Rel. 34, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                            65 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
REACTIVE BOND.
                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR002919; TIL_Cysrich. Pfam; PF01826; TIL; 1. Serine protease inhibitor. DOMAIN 4 59 TIL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=84255715; PubMed=6564898;
                                                                                                                                                                                                                                                                                                                                      (Rel. 08, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ilarity 31.7%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7241 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Perca fluviatilis (Perch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MT PERFL
ID MT P
AC P577
DT 01-0
DT 28-F
DE Meta
GN MT.
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ų.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         54
                                                                                                           Kille P., Olsson P.E.;
Submitted (APR-1996) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: METALLOTHIONEINS HAVE A HIGH CONTENT OF CYSTEINE
RESIDUES THAT BIND VARIOUS HEAVY METALLS (BY SIMILARITY).
-!- DOMAIN: CLASS I METALLOTHIONEINS CONTAIN 2 METAL-BINDING DOMAINS:
FOUR DIVALENT IONS ARE CHELATED WITHIN CLUSTER A OF THE ALPHA
DOMAIN AND ARE CORDINATED VIA CYSTEINVI. HIGHOLET BRIDGES TO 11
CYSTEINE LIGANDS. CLUSTER B, THE CORRESPONDING REGION WITHIN THE
BETA DOMAIN, CAN LIGATE THREE DIVALENT IONS TO 9 CYSTEINES.
-!- SIMILARITY: BELONGS TO THE METALLOTHIONEIN SUPERFAMILY; FAMILY 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTCNCGGSCTC-TNCSCTTCKKSCCPCCPSGCPK-----CASGCVC-----KGKTC
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Actinopterygii, Neopterygii, Teleostei, Euteleostei, Neoteleostei,
Acanthomorpha, Acanthopterygii, Percomorpha, Perciformes, Percoidei,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLUSTER A.
CLUSTER A.
CLUSTER A.
EM62ASEC16D7348A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 73; Db 1,
No. 0.15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. 0.15
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                     MSSP, P22184; 1J19.
INTERPRO; IPR003019; Metallthion.
InterPro; IPR000006; Metallthion_1.
Pfam, PP00131; metalthio, 1.
PROSITE; PS00203; MSTALLOFHIONEIN VRT; 1.
Metal-binding; Metal-thiolate cluster.
28 BETA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLUSTER A.
CLUSTER A.
CLUSTER A.
CLUSTER A.
CLUSTER A.
CLUSTER A.
CLUSTER A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ALPHA.

CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ITR1 ASCSU STANDARD, P19398; 01-NOV-1990 (Rel. 16, Created) 01-NOV-1990 (Rel. 16, Last seq
                                                                                                                                                                                                                                                                                                                                                                               EMBL; X97272; CAA65927.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    y Match
Local Similarity 35.0%;
hes 21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5926 MW;
                                                                                  SEQUENCE FROM N.A. TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percidae, Perca.
NCBI_TaxID=8168;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
ITR1_ASCSU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best
  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
```

```
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4 KCTKPNEQWTKCGG-CEGTCAQKIVP---CTRECKPPRCECIASAGFVRDAQGNCIKFED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11 KCPS-NEIFSRCDGRCQRFC-PNVVPKPLCIKICAP---GCVCRLGYLRNKKKVCVPRSK
15-SEP-2003 (Rel. 42, Last annotation update)
Trypsin inhibitor (ATI).
Ascaris suum (Pig roundworm) (Ascaris lumbricoides).
Bukaryota; Metazoa; Nematoda; Chromadorea; Ascarididae; Ascaridoidea;
Ascarididae; Ascaris.
NCBI_TaxID=6253;
                                                                                             Peanasky R.J., Martzen M.R., Homandberg G.A., Cash J.M., Babin D.R.,
Litwiller R.D.;
                                                                                                                                                                                                                    of a novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Oncorhynchus mykiss (Rainbow trout) (Salmo gairdneri), and
Salvelinus alpinus (Arctic char).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                         class of proteinase inhibitors.",

Biochemistry 29:183-189(1990).

-: SUBCELLULAR LOCATION: Secreted.

-! SIMILARITY: Contains 1 TIL (Trypsin inhibitory-like) domain.

PIR; S35098; S35098.

PDB; IATA; 31-AUG-94.

PDB; IATB; 31-AUG-94.

PDB; IATB; 31-AUG-94.

PDB; IATB; 31-AUG-94.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; Score 70.5; DB 1; Length 62;
; Pred. No. 0.28;
12; Mismatches 22; Indels
                                                                                                                   (In) McInnis A.J. (eds.);
Paradigms for eradicating helminthic parasites, pp.349-366,
Alan R. Liss, New York (1987).
                                                                                                                                                                STRUCTURE BY NWR.
MEDLINE-90212567; PubMed=2322539;
MEDLINE-90212567; PubMed=2322539;
Gronenborn A.M., Nilges M., Peanasky R.J., Clore G.M.;
"Sequential resonance assignment and secondary structure determination of the Ascaris trypsin inhibitor, a member
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6438D25D2F76D3E1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                or-mak-1989 (Rel. 10, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
MTB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60 AA.
                                                                                                                                                                                                                                                                                                                                InterPro; IPR02919; TIL_Cysrich.
Pfam; PF01826; TIL; 1.
Serine protease inhibitor; 3D-structure.
DOMAIN 5 60 TIL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6798 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18.0%;
29.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Local 18; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62 AA;
                                                                                                                                                                                                                                                                                                                                                                           553944433445595
23304444344559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 - ე
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MTB ONCMY
                                                                                                                                                                                                                                                                                                                                                                                   DISULFID
DISULFID
DISULFID
                                                                                 SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P09862;
                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MTB ONCMY
  ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ሯ
```

```
TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MT_ESOLU
P25127:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   reaction.
                                                                                                                                                                                                                                                           SEQUENCE
                                                                                        METAL
METAL
METAL
                                                                                                                                                                         METAL
                                                                                                                                                       WETAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 7
MT ESOLU
        21111111111
                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DER PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gerpe M., Kilng P., Olsson P.E.;

Gerpe M., Kilng P., Olsson P.E.;

"Metallothionein cDNA sequences and gene expression in arctic char

(Salvelinus alpinus) following metal and PCB exposure.";

MAR. Environ. Res. 46:551-554(1998).

-!- FUNCTION: METALLOTHIONEINS HAVE A HIGH CONTENT OF CYSTEINE

RESIDUES THAT BIND VARIOUS HEAVY METALS (BY SIMILARITY).

-!- DOWAIN: CLASS I METALLOCHHONEINS CONTAIN 2 METAL-BINDING DOWAINS:

FOUR DIVALENT IONS ARE CHELATED WITHIN CLUSTER A OF THE ALPHA

DOWAIN AND ARE CORDINATED VIA CYSTEINYL THIOLATE BRIDGES TO 11

CYSTEINE LIGANDS. CLUSTER B. THEE DIVALENT IONS TO 9 CYSTEINS.

BETA DOMAIN, CAN LIGATE THREE DIVALENT IONS TO 9 CYSTEINES.

-!- SIMILARITY: BELONGS TO THE METALLOCHIONEIN SUPERFAMILY; FAMILY 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                           SPECIES=0.mykiss; TISSUE=Liver;
MEDLINE=30116146; PubMed=1859844;
Kille P., Stephens P.E., Kay J.;
"Elucidation of cDNA sequences for metallothioneins from rainbow
trout, stone loach and pike liver using the polymerase chain
Actinopterygii; Neopterygii; Teleostei; Euteleostei;
Protacanthopterygii; Salmoniformes; Salmonidae; Oncorhynchus.
NCBI_TaxID=8022, 8036;
                                                                                                          SPECIES=O.mykiss; PubMed=2448099; MEDLINE=88111026; PubMed=2448099; Bonham K., Zafarullah M., Gedamu L.; Trott arithow trout metallothioneins: molecular cloning and characterization of two distinct cDNA sequences.";
                                                                                                                                                                                                                                                                          SPECIES-O.mykiss;
MEDLINE=89039876; PubWed=3185557;
Zafarullah M., Bonham K., Gedamu L.;
"Structure of the rainbow trout metallothionein B gene and characterization of its metal-responsive region.";
Mol. Cell. Biol. 8:4469-4476(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PIR; AJUBLO, ...
HSSP; P28184; 1J19.
InterPro; IPR003019; Metallthion.
InterPro; IPR000006; Metallthion.1.
Pfam; PF00131; metalthio; 1.
R PROSITE; PS00203; METALLOTHIONEIN_VRT; 1.
R PROSITE; PS00203; METALLOTHIONEIN_VRT; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Biochim. Biophys. Acta 1089:407-410(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLUSTER I
CLUSTER I
CLUSTER I
CLUSTER I
CLUSTER I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SPECIES=S.alpinus; TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; X59394; CAA42037.1; -.
EMBL; AF013801; AAB66343.1; -.
PIR; A30818; B27490.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; M18104; AAA49566.1; -. EMBL; M22487; AAA49567.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28
                                                                                                                                                                                                                  NA 6:519-528(1987).
                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                METAL
METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              METAL
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                     3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                     7 GGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC 60
                                                                                                                                                                                                                                                                                                                                                      15 GGSCKC-SNCACTSCKKSCCPCCPSDCSK-----CASGCVC-----KGKTC 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BSox lucius (Northern pike).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Actinopterygii, Neopterygii, Teleostei, Euteleostei, Esociformes,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kille P., Stephens P.E., Kay J., "Elucidation of cDNA sequences for metallothioneins from rainbow
                                                                                                                                                                                                                                                                                       14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        trout, stone loach and pike liver using the polymerase chain
                                                                                                                                                                                                                                                Score 69; DB 1; Length 60;
Pred. No. 0.39;
                                                                                                                                                                                                                                                                                   18; Indels
                                                                                                                                                                                                             9EA1E70FBE59B4EE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-MAY-1992 (Rel. 22, Created)
01-MAY-1992 (Rel. 22, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                   2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Biochim. Biophys. Acta 1089:407-410(1991).
CLUSTER B.
CLUSTER A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=91316146; PubMed=1859844;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=94032489; PubMed=8218416;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; X59392; CAA42035.1; -. EMBL; X70042; CAA49636.1; -. PIR; S38334; S31723.
                                                                                                                                                                                                                                                17.6%;
                                                                                                                                                                                                               6033 MW;
                                                                                                                                                                                                                                              Query Match
Best Local Similarity 37.0
Matches 20; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
 Metallothionein (MT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                               60 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI TaxID=8010;
```

```
SIMILARITY: BELONGS TO THE METALLOTHIONEIN SUPERFAMILY; FAMILY 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chan K.-M., Davidson W.S., Hew C.-L., Fletcher G.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A., AND SEQUENCE OF 1-25.
TISSUE=Liver;
                                                                             entities requires a license agreement (Se or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                             CLUSTER I
CLUSTER I
                                                                                                                                                                                                                                                                                                                                                                                          CLUSTER A
CLUSTER A
CLUSTER A
CLUSTER A
CLUSTER A
CLUSTER A
                                                                                                                                                                                                                                                                                          CLUSTER
                                                                                                                                                                                                                                                                                                                        CLUSTER
                                                                                                                                                                                                                                                                                                                                                          CLUSTER
CLUSTER
CLUSTER
                                                                                                                                                                                                                                                                              CLUSTER
                                                                                                                                                                                                                                                                                                               CLUSTER
                                                                                                                                                                                                                                                                                                                                               CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6029 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Metallothionein (MT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=8265;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      americanus)
                                                                                                                                                                                                                                                                                                                                                                                                                                                            METAL
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PSEAM
                                                                                                                                                                                                                                                        METAL
                                                                                                                                                                                                                                                                              METAL
                                                                                                                                                                                                                                                                                          METAL
                                                                                                                                                                                                                                               METAL
                                                                                                                                                                                                                                                                                                                                                                                METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
    ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Overnell U., Berger C., Wilson K.J.;
Overnell U., Berger C., Wilson K.J.;
Partial amino acid sequence of metallothionein from the plaice
(Pleuronectes platessa).";
Biochem. Soc. Trans. 9:217-218(1981).
-!- FUNCTION: METALLOTHICNEINS HAVE A HIGH CONTENT OF CYSTEINE
RESIDUES THAT BIND VARIOUS HEAVY METALS (BY SIMILARITY).
-!- DOWAIN: CLASS I METALLOTHICNEINS CONTAIN 2 METAL-BINDING DOMAINS:
FOUR DIVALENT IONS ARE CHELATED WITHIN CLUSTER A ALPHA
DOWAIN AND ARE COORDINATED VIA CYSTEINYL THIOLATE BRIDGES TO 11
CYSTEINE LIGANDS. CLUSTER B, THE CORRESPONDING REGION WITHIN THE
BETA DOMAIN, CAN LIGATE THREE DIVALENT IONS TO 9 CYSTEINES.
                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pleuronectes platessa (Plaice).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
Acanthomorpha; Acanthopterygii; Percomorpha; Pleuronectiformes;
Pleuronectoidei; Pleuronectidae; Pleuronectes.
                                                                                                                                                                                                                                                                                                                                                                                                             54
                                                                                                                                                                                                                                                                                                                                                                                                    GGSCKC-SNCACTSCKKSCCSCCPSGCSK------KASGCIC------KGKTC
                                                                                                                                                                                                                                                                                                                                                                                       GGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC
                                                                                                                                                                                                                                                                                                                                            Score 69; DB 1; Length 60;
Pred. No. 0.39;
); Mismatches 18; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Leaver M.J., George S.G.;
Submitted (NOV-1990) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                      9EA1E43F95F8D97E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-APR-1988 (Rel. 07, Created)
01-JUN-1994 (Rel. 29, Last sequence update)
8-FEB-2003 (Rel. 41, Last annotation update)
Metallothionein (MT).
                                         PRINTS; PRO0860; MTVERTEBRATE.
PROSITE; PS00203; METALLOTHIONEIN VRT; 1.
Metal-binding; Metal-thiolate cluster.
                                                                                     ALPHA.

CLUSTER B.

CLUSTER A.

                                                                                                                                                                                                                                                                                     CLUSTER A
           InterPro; IPR003019; Metallthion.
InterPro; IPR000006; Metallthion_1.
Pfam; PF00131; metalthio; 1.
                                                                                                                                                                                                                                                                                                                                                                  3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY PARTIAL SEQUENCE.
                                                                                                                                                                                                                                                                                                                                            17.6%;
                                                                                                                                                                                                                                                                                                                      5979 MW;
                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
HSSP; P02795; 1MHU
                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                      60 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=8262;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Simi
Matches 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MT_PLEPL
P07216;
                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                          DOMAIN
                                                                                               METAL
METAL
                                                                                                                                                                                                                                                                            (ETAL
ð
                                                                                                                                                                                                                                                                                                                                                                                                           셤
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions and its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ë
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Actinopterygii; Neopterygii; Teleostei; Buteleostei; Neoteleostei;
Acanthomorpha; Acanthopterygii; Percomorpha; Pleuronectiformes;
Pleuronectoidgi; Pleuronectidae; Pseudopleuronectes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGSCTC-KNCSCTTCNKSCCPCCPSGCPK-----CASGCVC-----KGKTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7 GGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14;
                                                                                                                                                                                             Pseudopleuronectes americanus (Winter flounder) (Pleuronectes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 68; DB 1; Length 60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            67B046EA4C7C470C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 0.5;
3; Mismatches
```

```
RESULT 11
MT_BALMY
     ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ë,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=94271779; PubMed=8003488; Quaife C.J., Findley S.D., Erickson J.C., Froelick G.J., Kally B.J., Zambrowicz B.P., Palmiter R.D.; "Induction of a new metallothionein isoform (MT-IV) occurs during differentiation of stratified squamous epithelia."; Biochemistry 33:7250-7259(1994).
-!- FUNCTION: SEEMS TO BIND ZINC AND COPPER. COULD FLAY A SPECIAL ROLE
                       metallothomein gene expression in winter flounder tissues.",
Can. J. Zool. 67:2520-2527(1989).
-!- FUNCTION: METALLOTHIONEINS HAVE A HIGH CONTENT OF CYSTEINE
RESIDUES THAT BIND VARIOUS HEAVY METALS (BY SIMILARITY).
-!- DOMAIN: CLASS I METALLOTHIONEINS CONTRIN 2 METAL-BINDING DOMAINS:
FOUR DIVALENT IONS ARE CHELATED WITHIN CLUSTER A OF THE ALPHA
DOMAIN AND ARE COORDINATED VIA CYSTEINVI. THIOLATE BRIDGES TO 11
CYSTEINE LIGANDS. CLUSTER B, THE CORRESPONDING REGION WITHIN THE
BETA DOMAIN, CAN LIGATE THREE DIVALENT IONS TO 9 CYSTEINES.
-!- SIMILARITY: BELONGS TO THE METALLOTHIONEIN SUPERFAMILY; FAMILY 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7 GGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGSCTC-KNCSCTTCNKSCCPCCPSGCPK-----CASGCVC-----KGKTC
                                                                                                                                                                                                                                                                                                        HSSP; P28184; 1JJ9.
InterPro; IPR003019; Metallthion.
InterPro; IPR003019; Metallthion.
Pfam; PF00131; metalthio; 1.
PROSITE; PS00203; METALLOTHIONEIN VRT; 1.
MOEAL-binding; Metalthiolate cluster; Copper; Acetylation.
MOD_RES 1 1 ACETYLATION.
DOMAIN 29 60 ALPHA.
Molecular cloning of metallothionein cDNA and analysis of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 68; DB 1; Length 60;
Pred. No. 0.5;
3; Mismatches 18; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY).
SIMILARITY).
SIMILARITY).
SIMILARITY).
SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIMILARITY).
SIMILARITY).
SIMILARITY).
SIMILARITY).
SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY).
SIMILARITY).
SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIMILARITY)
SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIMILARITY)
SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67B046EE5C7C470C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P47-944, P484, P484-1996 (Rel. 33, Created) 01-FEB-1996 (Rel. 33, Last sequence update) 01-FEB-1996 (Rel. 31, Last sequence update) Metallothionein-IV (MT-IV).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLUSTER 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLUSTER CLUSTER CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTER CLUSTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLUSTER CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17.4%;
35.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6043 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MT4 HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         METAL
METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       METAL
METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     METAL
METAL
METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    METAL
METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  METAL
METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TETAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best
  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7 GGRGKCPSNEIFSRCDGR-CQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVP 62
                           STRATIFIED RPITHELIA.
-!- SIMILARITY: BELONGS TO THE METALLOTHIONEIN SUPERFAMILY; FAMILY 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Cetacea; Mysticeti; Balaenidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11 GGICMCGDNCKCTTCNCKTCRKSCCPCCP-PGCAK-CARGCICKGG---SDKCSCCP
REGULATING ZINC METABOLISM DURING THE DIFFERENTIATION OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1; Length 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY).
SIMILARITY).
SIMILARITY).
SIMILARITY).
SIMILARITY).
SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY)
SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIMILARITY)
SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIMILARITY)
SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLUSTER A (BY SIMILARITY 36157CBA17BF28CC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                PIR; A53640; A55640.

HSSP; P18055; IMRB.
Genew; HGMC:18705; MT4.

MM; 606206; -.

GO; GO:0005737; C:cytoplasm; NAS.

GO; GO:0005507; F:copper ion binding activity; NAS.

GO; GO:0005507; F:zinc ion binding activity; NAS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | InterPro; | Inte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 67; DB 1;
Pred. No. 0.66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLUSTER A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLUSTER P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Balaena mysticetus (Bowhead whale)
                                                                                                                                                                                                                                                                                                                                                           EMBL; U07807; AAA20232.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17.1%;
ilarity 35.1%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6419 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Metallothionein (MT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Local 20; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=27602;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MT_BALMY
018842;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Balaena
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PACOCCOCCOS RAPERS
```

```
TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MT_ZOAVI
P52728;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                       METAL
                                                                                                                                                                                                                                                                                                                                                                                                                            METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                           METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 13
           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    검검검
                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation. the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ä
Kaysen J., O'Hara T., Goodwin T., Linnehan R., Hammond T., Submitted (AUG-1997) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: METALLOTHIONEINS HAVE A HIGH CONTENT OF CYSTEINE RESIDUES THAT BIND VARIOUS HEAVY METALLS (By similarity).
-!- SUBGINIT: Monomer (By similarity).
-!- DOMAIN: CLASS I METALLOTHIONEINS CONTAIN 2 METAL-BINDING DOMAINS: FROME DIVALENT IONS ARE CHELATED WITHIN CLUSTER A OF THE ALPHA DOMAIN AND ARE COORDINATED VIA CYSTEINYL THIOLATE BRIDGES TO 11 CYSTEINE LIGANDS. CLUSTER B, THE CORRESPONDING REGION WITHIN THE BETA DOMAIN, CAN LIGATE THREE DIVALENT IONS TO 9 CYSTEINES.
-!- SIMILARITY: BELONGS TO THE METALLOTHODEIN SUPERFAMILY; FAMILY 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Salmo salar (Atlantic salmon).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCR 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10 GGSCTCAGSCKCKECKCTS-CKKSCCSCCP----PGCTK-CAQGCVCK 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; DB 1; Length 61; 0.74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                              SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                  SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                       SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                            SIMILARITY)
SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY)
SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY)
SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                    SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                  SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACETYLATION (BY SIMILAR) 4D0A7C5E1D23A4A3 CRC64;
                                                                                                                                                                                                                                       InterPro; IPR003019; Metallthion.
InterPro; IPR003019; Metallthion 1.
Pfam; PF00131; metalthio; 1.
PRINTS; PR00860; MTVERTEBRATE.
PROSITE; PS00203; METALLOTHIONEIN VRT; 1.
Metal-binding; Metal-thiolate cluster; Acetylation.
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-0CT-1996 (Rel. 34, Created)
01-0CT-1996 (Rel. 34, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Metallothionein B (MT-B).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  38.8%; Pred. ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLUSTER A (BY
CLUSTER A (BY
CLUSTER A (BY
                                                                                                                                                                                                                                                                                                                               CLUSTER A (BY CLUSTER A (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLUSTER A (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 66.5;
                                                                                                                                                                                                                                                                                                                    ALPHA.

CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
CLUSTER E
                                                                                                                                                                                                                      EMBL; AF022117; AAB72006.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6025 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity 38.8
les 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                  HSSP; P02795; 2MHU.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MTB_SALSA
P52720;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOD RES
                                                                                                                                                                                                                                                                                                                  DOMAIN
METAL
METAL
METAL
                                                                                                                                                                                                                                                                                                                                                            METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 12
MTB_SALSA
        ð
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3,
                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7 GGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15 GGSCKC-ANCACTSCKKSCCPCCPSGCSK-----KASGCVC-----KGKTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 66; DB 1; Length 60;
Pred. No. 0.82;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18; Indels
Actinopterygii; Neopterygii; Teleostei; Buteleostei;
Protacanthopterygii; Salmoniformes; Salmonidae; Salmo.
NCBI_TaxID=8030;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         187A9D0FBE5BD967 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-0CT-1996 (Rel. 34, Created)
01-0CT-1996 (Rel. 34, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                               3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLUSTER
CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                        EMBL; X97275; CAA65930.1; -. HSSP; P28184; 1J19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5959 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match

Best Local Similarity 35.2%,

"an 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60 AA;
```

ω

```
Local Sim-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the BRBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4;
                                                                                                                                                                                                        Submitted (PAR-1996) to the EMBL/GenBank/DDBJ databases.

Submitted (PAR-1996) to the EMBL/GenBank/DDBJ databases.

-!- PUNCTION: METALLOTHIONEINS HAVY A HIGH CONTENT OF CYSTEINE
RESIDUES THAT BIND VARIOUS HEAVY METALS (BY SIMILARITY).

-!- DOMAIN: CLASS I METALLOTHIONEINS CONTAIN 2 METAL-BINDING DOMAINS:

FOUR DIVALENT IONS ARE CHELATED WITHIN CLUSTER A OF THE ALPHA
DOMAIN AND ARE COORDINATED VIA CYSTEINVL THIOLATE BRIDGES TO 11
CYSTEINE LICANDS. CLUSTER B, THE CORRESPONDING REGION WITHIN THE
BETA DOMAIN, CAN LIGHTE THREE DIVALENT IONS TO 9 CYSTEINES.

-!- SIMILARITY: BELONGS TO THE METALLOTHIONEIN SUPERFAMILY; FAMILY 1.
                                                    Bukaryota; Merazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Actinopterygii; Neopterygii; Teleostei; Buteleostei; Neoteleostei;
Acanthomorpha; Acanthopterygii; Percomorpha; Perciformes; Zoarcoidei;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7 GGRGKCPSNEIFSRCDGRCORFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGSCKC-TNCSCTTCKKSCCPCCPSG----CTK-CASGCVC-----KGKTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 65; DB 1; Length 60;
Pred. No. 1.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3; Mismatches 17; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; X97270; CAA65925.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6047 MW;
                                      Soarces viviparus (Eelpout)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28
  Metallothionein (MT).
                                                                                                                 Zoarces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity
Matches 20; Conserv
                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60 AA:
                                                                                                                               NCBI_TaxID=48416;
                                                                                                                                                                                          TISSUE=Liver;
                                                                                                                   Zoarcidae:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     METAL
METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           METAL
METAL
METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        METAL
METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 14
MT4 MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TETAL
SOUR PROBLEM STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STATES STA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bloinformatics and the RNBL outstation the buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11 GGICICGDNCKCTTCSC-KTCRKSCCPCCP----PGCAK-CARGCICKGG---SDKCSC 60
                                                                                                                                                                                                                                                                                                                    Quaife C.J., Findley S.D., Brickson J.C., Froelick G.J.,
Kelly E.J., Zambrowicz B.P., Palmiter R.D.;
"Induction of a new metallothionein isoform (MT-IV) occurs during
differentiation of stratified squamous epithelia.";
Biochemistry 33:7250-7259(1994).
-i- FUNCTION: SEEMS TO BIND ZINC AND COPPER. COULD PLAY A SPECIAL ROLE
IN REGILATING ZINC METABOLISM DURING THE DIFFERENTIATION OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRATIFIED EPITHELIA.
-!-TISGUE SPECIFICITY: EXPRESSED EXCLUSIVELY IN STRATIFIED SQUAMOUS
EPITHELIA ASSOCIATED WITH ORAL EPITHELIA, OESOPHAGUS, UPPER
STOMACH, TAIL, ROOTPEADS, AND NEONATAL SKIN.
-!- SIMILARITY: BELONGS TO THE METALLOTHIONEIN SUPERFAMILY; FAMILY 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10; Gaps
                                                                                                                                                      Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Butheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 65; DB 1; Length 62; Pred. No. 1.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8F78DA6D0744333A CRC64;
01-FEB-1996 (Rel. 33, Created)
01-FEB.1996 (Rel. 33, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Metallothionein-IV (MT-IV).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR003019; Metallthion.
InterPro; IPR000006; Metallthion_1.
Pfam; PF00131; metalthio; 1.
PROSITE; PS00203; METALLOTHIONEIN_VRT; 1.
                                                                                                                                                                                                                                                                                                 MEDLINE=94271779; PubMed=8003488;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; U07808; AAA20233.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6276 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PIR; B53640; B53640.
HSSP; P18055; 1MRB.
MGD; MGI:99692; Mt4.
                                                                                                                            Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62 AA;
                                                                                                                                                                                                       NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
```

4

62 AA

STANDARD;

MT4_MOUSE

σ

61 VP 62

ਨੇ

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       development.";

DNA Cell Biol. 17:83-91 (1998).

-!- FUNCTION: METALLOTHIONEINS HAVE A HIGH CONTENT OF CYSTEINE
RESIDUES THAT BIND VARIOUS HEAVY METALS (By similarity).

-!- DOMAIN: CLASS I METALLOTHIONEINS CONTAIN 2 METAL-BINDING DOMAINS:
FOUR DIVALENT IONS ARE CHELATED WITHIN CLUSTER A OF THE ALPHA
DOMAIN AND ARE CORDINATED VIA CYSTEINVL THIOLATER BRIDGES TO 11
CYSTEINE LIGANDS. CLUSTER B, THE CORRESPONDING REGION WITHIN THE
BETA DOMAIN, CAN LIGATE THREE DIVALENT IONS TO 9 CYSTEINES.

-!- SIMILARITY: BELONGS TO THE METALLOTHIONEIN SUPERFAMILY; FAMILY 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukāryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Caudata; Salamandroidea; Ambystomatidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Cloning of a complementary DNA encoding an Ambystoma mexicanum metallothionein, AmMT, and expression of the gene during early
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUB=Embryo;
MEDLINE=98127743; PubMed=9468225;
Saint-Jacques E., Guay J., Wirtanen L., Huard V., Stewart G.,
                                                                                                                                                                                                                                     16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-EBB-2003 (Rel. 41, Last annotation update)
Metallothionein (MT) (AnMT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL, AF008583, AAB71835.1; -
HSSP, P02795, 1MHU.
InterPro; IPR0024019, Metallthion.
InterPro; IPR002019, Metallthion.
InterPro; IPR002019, Metallthion.
FRINTS, PR00131; metallthio.
PRINTS; PR00131; metallthio.
PRINTS; PR00860; MTVERTEBRATE.
PROSITE; P800203; METALLOTHIONEIN VRT; I.Metal-binding; Metal-thiolate cluster.
DOMAIN
1 28 BETA.
DOMAIN
2 6 0 ALPHR.
METAL 11 11 CLUSTER B.
METAL 13 13 CLUSTER B.
METAL 17 17 CLUSTER B.
METAL 22 22 CLUSTER B.
METAL 24 24 CLUSTER B.
METAL 27 24 CLUSTER B.
METAL 27 24 CLUSTER B.
METAL 31 31 CLUSTER B.
METAL 37 34 CLUSTER B.
METAL 37 27 CLUSTER B.
METAL 31 31 CLUSTER B.
METAL 33 35 CLUSTER A.
METAL 34 34 CLUSTER A.
METAL 35 35 CLUSTER A.
                                                                                                                                                                                                                                                                                                                                                                                                                    Ambystoma mexicanum (Axolotl).
                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=8296;
61 CP 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ambystoma.
                                                                                                                                                                        MT_AMBME
042152;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Seguin C
                                                                                                                                                                                                            A PROPERTY TO THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF 
셤
```

```
8 GGSCSCAGSCKCENCKCTS-CKKSCCSCCPSECEK-----CGQGCVCKGG 51
                                                                                                                          1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLG 51
                                                                                   DB 1; Length 60;
                                                                                                        23; Indels
                              CLUSTER A.
CLUSTER A.
CLUSTER A.
AB05F49153953279 CRC64;
                                                                                  Score 63.5; DE Pred. No. 1.5; 4; Mismatches
                                                                                                                                                                            Search completed: November 17, 2003, 08:16:04 Job time : 11 secs
                     CLUSTER
                                                                                   16.2%;
42
46
48
56
58
59
79 MW;
                                                                                                         17; Conservative
                                                                                 Query Match
Best Local Similarity
                                                              60 AA;
                                                               SEQUENCE
                    METAL
METAL
                                          METAL
                                                   METAL
                                                                                                         Matches
2111118
                                                                                                                                               g
```

ñ

7; Gaps

us-09-506-978-1.closed.rspt

```
November 17, 2003, 08:13:38; Search time 34 Seconds (without alignments) 508.515 Million cell updates/sec
                                                                                                                                                                                  US-09-506-978-1
391
1 GGFGGLGGRGKCPSNEIFSR......CRLGYLRNKKVCVPRSKCG
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                          830525 seqs, 258052604 residues
                                                                        - protein search, using sw model
                                                                                                                                                                                                                                                                BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                          Perfect score:
                                                                                                                                                                                                                                                                Scoring table:
                                                                        OM protein
                                                                                                                                                                                                                              Sequence:
                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                              Run on:
```

Minimum DB seq length: 0 Maximum DB seq length: 67

66991

Total number of hits satisfying chosen parameters:

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries SPIREMBL 23:* Database

sp archea:*
sp bacteria:*
sp human:*
sp human:*
sp invertebrate:*
sp mammal:*
sp mammal:*
sp organele:*
sp organele:*
sp plant:*
sp plant:*
sp plant:*
sp plant:*
sp plant:*
sp plant:*
sp prodent:*
sp sp_rvirus:* sp_bacteriap:* sp_archeap:* 12::13::13::

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Opps gallus gall Opps gallus gall Opps platichthys Opps gallus coulu Opps gallus Opps gall Q8uvyl lithognathu Q98si5 leuciscus c Q8awg2 carassius c Q8jhc5 gobius nige Q8awg1 carassius c 077419 ascaris suu Q8wvb5 homo sapien Description SUMMARIES 0077419 Q8WYBS Q9BTP8 Q9BTP9 Q9BTP0 Q8BTP3 Q8BTC9 Q9BTC0 Q8BTI14 Q8BTC9 Q8BTI14 Q8BUY1 Q8BUY1 Q8BUY1 Q8BUY1 Q8BUY2 Q8AWG2 a 11333 Query Match Length DB 22.6 16.2 16.0 15.3 15.3 15.2 88.5 63.5 62.5 62.5 58.5 58.5 57.5 57.5 57.5 59.5 Score 1411111 Result

4

63 57

> SKC 66 9 -00 -00 -00

64

셤 8 셤

Q8prs9 methanosarc Q12928 homo sapien Q8tdc4 homo sapien Q9pvg7 xiphophorus Q8xpy7 xiphophorus	Qeocsa nome sapten Qenghi ruditapes d O65918 picea maria Qenaz homo sapien Qeyurz anabaena sp Oftrn8 merhancarr	Q95p38 homarus ame Q95u91 scylla serr Q8xxic salmonella Q97bh4 thermoplasm O9u623 pacifastacu		Q9udp7 homo sapien Q9hj7B thermoplasm Q9dx87 rattus norv Q9n9h2 venerupis (Q9bxg3 homo sapien Q18780 ovis aries Q9pvg6 xiphophorus
55 17 Q8PRS9 48 4 Q12928 61 4 Q8TDC4 39 13 Q9PVG7 56 4 ORTCS1	. 2. 4 H H H H H H	116 O	43 4 Q8NES8 58 5 Q95U93 58 5 Q9TUPE 59 5 Q9TWPE 29 10 Q9SBD2 31 6 077625	41 4 Q9UDP7 55 17 Q9HJ78 57 11 Q9QX87 57 5 Q9N9H2 61 4 Q9BXG3 61 6 018780 41 13 Q9PVG6
54.5 54.5 54.5 53.9 53.13.6 53.13.6 53.13.6	51.5 51.5 51.5 51.3.0 51.13.0 51.13.0	46666		48.5 12.4 47.5 12.1 47.5 12.1 47.5 12.1 47.5 12.1 47.5 12.1 47.5 12.1
22222222222222222222222222222222222222	2 2 5 5 4 5 3 I	330 330 350 350 350 350 350 350 350 350	8 8 8 8 8 8 8 8 8 8 8 8 8 8 9 9 9 9 9 9	W 4 4 4 4 4 4 W O 4 W W 4 N

Ę		
37		
Ā		

```
8 GRGKCPSNEIFSRCDGRCQRFC--PNVVPKPLCIKICAPGCVCR--LGYLRNKKKVCVPR
                                                                                                                                                                                                                                                                                                                                                                                     Ascaris suum (Pig roundworm) (Ascaris lumbricoides).
Eukaryota; Metazoa; Nematoda; Chromadorea; Ascaridida; Ascaridoidea;
Ascarididae; Ascaris.
NCBL TaxID=6253;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.

MEDLINE=98297373; PubMed=9635450;

Lu C.C., Mayyen T., Morris S., Hill D., Sakanari J.A.;

Lu C.C., Mayyen T., Morris S., Hill D., Sakanari J.A.;

Lu C.C., Mayyen T., Morris S., Hill D., Sakanari J.A.;

Lu C.C., Mayyen T., Morris S., Hill D., Sakanari J.A.;

SETINE Protease inhibitors from an ascarid nematode.";

Exp. Parasitol. 89:557-261(1998).

Exp. Parasitol. 89:557-261(1998).

Exp. Parasitol. 11. Cysrich.

Prim. PF01826; TIL; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 88.5; DB 5; Length 62;
Pred. No. 0.00076;
9; Mismatches 26; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62 AA; 6794 MW; 154CE25A375E0B2C CRC64;
                                                                                                                                                                     01-NOV-1998 (TrEMBLrel. 08, Created)
01-NOV-1998 (TrEMBLrel. 08, Last sequence update)
01-UUN-2002 (TrEMBLrel. 21, Last annotation update)
                                                                                            62 AA
                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22.6%;
ilarity 33.3%;
Conservative
                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Simi]
Matches 21; (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NON TER
NON TER
                                                                                  077419
                                                                                                                                                                                                                                                                                                                                                         ASC/E-1
RESULT 1
                                                                                       SO THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND THE BEAR AND TH
```

```
10 CDGKALSLCP---PPPLGCELVKEPGCGCCL 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                             Q98TP9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        099KF9
                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ID PAC OCC ON THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF TH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
;
                                                                                                                                                                                                                                                                                                                                                                                  A Strausberg R.;
Submitted (DEC-2001) to the EMBL/GenBank/DDBJ databases.
Strausberg R.;
Submitted (DEC-2001) to the EMBL/GenBank/DDBJ databases.

- I- FUNCTION: METALLOTHINS HANY METALS (BY SIMILARITY).

RESIDUES THAT BIND VARIOUS HEAVY METALS (BY SIMILARITY).

REMBL; BCO18190; AAH18190.1, -.

DR FERD; PRO18190; Metallthion.

InterPro; IPR003006; Metallthion.

DR PERM; PR00131; metallthion.

DR PERM; PR00131; metallthion.

PROSITE; PS00203; METALLOTHIONEIN_VRT; I.

KW Metal-binding; Metal-thiolate cluster.

SEQUENCE 61 AA; 6054 MW; 3C4827F942E986B5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MELINE=96414636; PubMed=8817657;
Allander S.V., Ehrenborg E., Luthman H., Powell D.R.;
Allander S.V., Ehrenborg E., Luthman H., Powell D.R.;
Conservation of IGFBP structure during evolution: cloning of chicken insulin-like growth factor binding protein-5.";
Prog. Growth Ractor Res. 6:159-165(1995).
InterPro; IPR000867; Insl_gro_fac_pr.
Fram; PF00219; IGFBP; 1.
SWART; SM00121; IB; 1.
PROSITE; PS00022; IGF BINDING; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9PS78;
01-MAY-2000 (TIEMBLrel. 13, Created)
01-MAY-2000 (TIEMBLrel. 13, Last sequence update)
01-MAY-2002 (TIEMBLrel. 21, Last annotation update)
10-JUN-2002 (TIEMBLrel. 21, Last annotation update)
11sulin-like growth factor binding protein-5, IGFBP-5 (Fragment).
Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                 Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ch 16.2%; Score 63.5; DB 4; Length 61; I Similarity 34.8%; Pred. No. 1.1; 16; Conservative 6; Mismatches 19; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 GGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCR 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11 GSCACAGSCKCNE--CKCTS-CKKSCCSCCPVG-CAK-CAQGCICK 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16.1%; Score 63; DB 13; Length 51; 45.2%; Pred. No. 1.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2; Mismatches 11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          51 AA; 5127 MW; 662EA453F4CCB267 CRC64;
                                                                                                                              01-MAR-2002 (TrEMBLrel. 20, Created)
01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
                                                                                          61 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           51 AA.
                                                                                                                                                                                                     Similar to metallothionein 1L (MT). Homo sapiens (Human).
                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity
Matches 14; Conserv
                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                    NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gallus.
NCBL_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                   TISSUE=Ovary;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local
Matches 1
                                                                                  O8WVB5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      09PS78
                                    RESULT 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 3
Q9PS78
                                                            Q8WVB5
                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
```

21 CDGRCQRFCPNVVPKPL-CIKICAPGCVCRL 50

```
Gaps
                                                                                                                                                                           Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Actinopterygii; Neopterygii; Teleostei; Buteleostei; Neoteleostei; Acanthomorpha; Acanthopterygii; Percomorpha; Pleuronectiformes; Pleuronectoidei; Pleuronectidae; Platichthys.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleogtomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 13; Length 40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 62.5; DB 11; Length 44; Pred. No. 1.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3; Mismatches 17; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Strausberg R.; Submitted (MAR-2001) to the EMBL/GenBank/DDBJ databases. EMBL; BC004681; AAH04681.1; -MGD; MGI:1919666; 3110001K13Rik.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7 GGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGSCTC-KNCSCTTCNKSCCPCCPFGCPK-----CASGCVCK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                40 AA; 4010 MW; B5CEB05E4200855B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hypothetical protein.
SEQUENCE 44 AA; 4900 MW; C49523A82D448591 CRC64;
                                     01-UTN-2001 (TrEMBLrel. 17, Created)
01-UTN-2001 (TrEMBLrel. 17, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
Metallothionein (MT) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-070-2001 (TrEMBLrel. 17, Created)
01-070-2001 (TrEMBLrel. 17, Last sequence update)
10-077-2002 (TrEMBLrel. 22, Last annotation update)
Hypotheical 4.9 kDa protein.
  40 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  44 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR000006; Metallthion 1.
Pfam; PF00131; metalthio; 1.
PROSITE; PS00203; METALLOTHIONEIN VRT; 1.
Metal-binding; Metal-thiolate cluster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16.0%; Score 62.5; 37.2%; Pred. No. 1;
                                                                                                                                                         Platichthys flesus (Buropean flounder).
  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR003019; Metallthion.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16.0%;
33.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 37.29
Matches 16; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                       NCBI_TaxID=8260;
```

3

5,

Gaps

9

55

OBTDN3

à

```
Premiur. And the Mail of Matter M.;

RT Molecular cloning of metallothionein cDNA from yellow tail (Seriola Tr Molecular cloning of metallothionein cDNA from yellow tail (Seriola quinqueradiata) for monitoring of environmental pollution.";

RT Quinqueradiata) for monitoring of environmental pollution.";

RESIDURATION: METALLOTHIONEINS HAND A HIGH CONTENT OF CYSTEINE RESIDURES THAT BIND VARIOUS HEAVY METALS (BY SIMILARITY).

CC -1- SIMILARITY: BELONGS TO THE METALLOTHIONEIN SUPERFAMILY; FAMILY 1.

DR REBL; ABOS9742; BAB41015.1; -.

DR REBL; ABOS9742; BAB41015.1; -.

DR RESIDURATIONEIN METALLOTHIONEIN SUPERFAMILY; FAMILY 1.

RESIDURATIONE METALLOTHIONEIN VRT; 1.

RESIDURATIONE METALLOTHIONEIN VRT; 1.

RESIDURATIONE METALLOTHIONEIN VRT; 1.

WEALAL-binding; Metal-thiolate cluster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Seriola quinqueradiata (Five-ray yellowtail).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Actinopterygii, Neopterygii; Teleostei; Buteleostei; Neoteleostei;
Acanthomorpha; Acanthopterygii; Percomorpha; Perciformes; Percoidei;
Carangidae; Seriola.
                                                                                                                                                                                                                                                                                                                                                                                                                                       Hypothetical protein.
Hypothetical protein.
Hymo sapiens (Human).
Bukaryota; Metakoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 GFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIK----ICAPGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15 ĠFSGVLGGGRCGQG-----GSCESLGPPPASSLLCSKPASGPMVCLEGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 4; Length 63;
                                              Score 60; DB 4; Length 61;
                                                                                              17; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Argument R.;
Strausberg R.;
Strausberg R.;
Submitted (MAR-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; BC004969; AAH04969.1; -.
Hypothetical protein.
SEQUENCE 63 AA; 5927 MW; 8DF7AB2529D8628C CRC64;
                                                                                                                                               10 GKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRN
                                                                                                                                                                         GSCKCKE.-CKCTS-CKKSCSCCPVG-CAK-CAHGCVCK-GTLEN
755E7B4F9B8411CE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (TrEMBLrel. 17, Created)
(TrEMBLrel. 17, Last sequence update)
(TrEMBLrel. 23, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                    Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 59.5; DE
Pred. No. 3.8;
4; Mismatches
                                                                                              5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         48
                                                                                                                                                                                                                                                                                                                      63
                                                                       Pred. No
                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ul-MAR-2003 (TrEMBLrel. 23, Last Metallothionein (MT) (Fragment). MT.
                                                                                                                                                                                                                                                                                                                                                                                                                  22,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29.4%;
                                                                     ilarity 39.1%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15.2%;
6137 MW;
                                              15.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY:
                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                    (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                       01-OCT-2002 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity
Matches 15; Conserv
                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
  61 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=8161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE=Skin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-JUN-2001
01-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                    01-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                01-JUN-2001
                                                                                              18;
                                                                                                                                                                                                17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
  SEQUENCE
                                                                                                                                                                                                                                                                                                                        Q9BSK9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         098TC0
                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 9
Q98TC0
                                                                                                                                                                                                                                                                        α
                                                                                                                                                                                                                                                                        RESULT
Q9BSK9
                                                                                                                                                                                                                                                                                                                                               SO SE REPRESENTATION OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ਨੇ
                                                                                                                                                                                             유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
  ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens (Human).
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens (Human).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
  6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Strausberg R.;
Strausberg R.;
Submitted (APR-2002) to the EMBL/GenBank/DDBJ databases.
EMBL; BC028280; AAH20280.1; -.
InterPro; IPR002400; GF_Cyskrot.
InterPro; IPR003019; Metallthion.
InterPro; IPR0030019; Metallthion.
InterPro; IPR000006; Metallthion.
Pfan; PF001131; metalthio; 1.
PRINTS; PR00438; GFCYSKNOT.
PRINTS; PR00860; MTVERTEBRATE.
Hypothetical protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 60; DB 4; Length 61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17; Indels
  14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GKCPSNEIFSRCDGRCORFCPNVVPKPLCIKICAPGCVCRLGYLRN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GSCTCKE--CKCTS-CKKSCCSCCPVG-CAK-CAHGCVCK-GTLEN
                                                   99
                                                                          754753ED088411CE CRC64;
                                                   CORPCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKC
                                                                                                                                                                                                                                                                     01-JUN-2002 (TrEMBLrel. 21, Created)
01-JUN-2002 (TrEMBLrel. 21, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15.3%; Scor.
39.1%; Pred. No. 3...,
... 5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ą
                                                                                                                                                                                                                            Z
  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSITE; PS00203; METALLOTHIONEIN VRT; 1. Metal-binding; Metal-thiolate cluster. SEQUENCE 61 AA; 6110 MW; 754753ED08841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                            PRT;
  5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (TrEMBLrel. 22, C
(TrEMBLrel. 22, I
(TrEMBLrel. 23, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00131; metalthio; PRINTS; PR00438; GFCYSKNOT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
TISSUE=Colon, and Kidney;
  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                               Metallothionein 1M (MT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hypothetical protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-OCT-2002
01-OCT-2002
01-MAR-2003
  14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                   25
                                                                                                    10
                                                                                                                                                                                                                                                      28TDN3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q8N339
                                                                                                                                                                                                                            Q8TDN3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
  Matches
                                                                                                                                                                           RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 7
```

g

ò

7

Gaps

Indels

46 13;

```
Metallthion 1.
    InterPro; IPR003019; Metallthion.
InterPro; IPR000006; Metallthion_
Pfam; PF00131; metalthio; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 33.37
Best Local Similarity 37.37
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Leuciscus cephalus (Chub)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sparidae; Lithognathus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=50591;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tom M.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q98SI5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q98SI5
                                                                                                                                                                                                                                                                                                                                                                                                                                    08UVY1
                                                                                                                                                                                                                                                                                                                                                                                          RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     098815
       à
                                                                                                                                                                                                                                                                                                                   쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.

Van Weyenbergh J., De Ley M.;

Van Weyenbergh J., De Ley M.;

Van Weyenbergh J., De Ley M.;

Van Meyenbergh J., De Ley M.;

Submitted (JAM-2002) to the EMBL/GenBank/DDBJ databases.

-!- FUNCTION: METALLOTHIONEINS HAVE A HIGH CONTENT OF CYSTEINE

RESIDUES THAT BIND VARIOUS HEAVY METALS (BY SIMILARITY).

-!+ SIMILARITY: BELONGS TO THE METALLOTHIONEIN SUPERFAMILY; FAMILY 1.

EMBL; AY077636; AAL76084.11; -.

InterPro; IPR002400; GF_Cysknot.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                     Gaps
                                                                                                                                                             9
                                                                                                                                                                                                         47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bos taurus (Bovine).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Cetartiodactyla, Ruminantia, Pecora, Bovoidea,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                           7 GGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC
                                                                                                                                                                                           8 GGSCTC-TNCSCTTCKKSCCPCCPSG----CTK-CASGCVC-----KGKTC
                                                                                                                     14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
Salvini M., Conte G., Taddei S., Durante M.;
Salvini M., Conte G., Taddei S., Durante M.;
"Bovine metallothioneins in Italian population.";
Submitted (JUN-2002) to the EMBL/GenBank/DDBJ databases.
EMBL, AJ489255, CAD33255.1; -.
InterPro; IPR002400; GP_cysknot.
InterPro; IPR003019; Metallthion.
InterPro; IPR000006; Metallthion.
Pfan, PF00131; metalthio; 1.
RRINTS; PR00143; GFCYSKNOT.
RRINTS; PR00860; MTWETERRATE.
                                                                 15.1%; Score 59; DB 13; Length 48;
.larity 35.2%; Pred. No. 3.4;
Conservative 3; Mismatches 18; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15.1%; Score 59; DB 6; Length 61; 38.5%; Pred. No. 4.2; tive 2; Mismatches 10; Indels
    48
4732 MW; 17ADDD345E376867 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 AA; 5981 MW; CB564C7CC2CAA995 CRC64;
                                                                                                                                                                                                                                                                                                                                                         01-07T-2002 (TrEMBLrel. 22, Created)
01-0CT-2002 (TrEMBLrel. 22, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11 KCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCR 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25 RCPS-----CKKSCCSCCP----VGCAK-CAQGCVCK 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-JUN-2002 (TrEMBLrel. 21, Last sequence update) 01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Zinc-induced metallothionein 2A/1A hybrid (MT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 AA.
                                                                                                                                                                                                                                                                                                                        61 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE; PS00203; METALLOTHIONEIN VRT; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-JUN-2002 (TrEMBLrel. 21, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                  Metallothionein-1A (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 15.1
Best Local Similarity 38.5
Matches 15; Conservative
                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bovidae; Bovinae; Bos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (Human)
  48
48 AA;
                                                                                         Local Similarity
les 19; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
NON TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                    Query Match
                                                                                                                                                                                                                                                                                                                   QBMII4
QBMII4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NON TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q8TE66
                                                                                                                                                                                                                                                                                                                                                                                                                                                         MT-1A
                                                                                                              Matches
                                                                                                                                                                                                                                                                         RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28TE66
                                                                                                                                                                                                                                                                                              Q8MII4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SO DE REPRENTATION OF SET THE SO OF SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SET THE SE
  F.T
SO
                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
```

```
4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Metallothionein (MT).
Lithognathus mormyrus (Striped Reabream).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi;
Actinopterygii; Neopterygii, Teleostei; Buteleostei; Neoteleostei;
Acanthomorpha, Acanthopterygii; Percomorpha; Perciformes; Percoidei;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
Cyprinidae; Leuciscus.
(VSI_TaxID=8284;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7 GGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGSCSC-TNCSCTSCKKSCCSCCPAGCSK-----KGKTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14;
                                                                                                                                                                             5
                                                                                                                           DB 4; Length 61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14.8%; Score 58; DB 13; Length 60; 33.3%; Pred. No. 5.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20; Indels
                                                                                                                                                                          Indels
PRINTS; PR00438; GFCYSKNOT.
PROSTITE; PS00203; METALLOTHIONEIN VRT; 1.
Metal-binding; Metal-thiolate cluster.
SEQUENCE 61 AA; 6118 MW; 600A7E1F999EFA09 CRC64;
                                                                                                                                                                                                                        10 GKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCR 49
                                                                                                                                                                                                                                                      17 GSCKCKE--CKCTS-CKKSCCSCCPMS-CAK-CAGGCICK 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7872414669F3B91B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                      01-MAR-2002 (TrEMBLrel. 20, Created)
01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
                                                                                                                                                                          15;
                                                                                                                        Query Match
15.0%; Score 58.5; DE
Best Local Similarity 35.0%; Pred. No. 4.9;
Matches 14; Conservative 6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                             60 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  49 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRINTS; PRO0860; MTVERTEBRATE.
ROSSITE; PSO0203; METALLOTHIONEIN VRT; 1.
Metal-binding; Metal-thiolate cluster.
SEQUENCE 60 AA; 5936 MW; 7872414669F31
                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Metallothionein (MT) (Fragment).
```

```
Metallothionein (Fragment).
                                                                                                                                                                                                                                                                                                                                                  Job time : 35 secs
                                                                                                                                                                                                                                                            18;
                                                                                                                                                                                        NON TER
NON TER
SEQUENCE
8
                                                                                                                                                                                                                                                                                                     쉼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2;
                                                                                                                                                                                                                                    2
                  SECUENCE FROM N.A.
MEDLINES20168892; PubMed=10706375;
Ren H.W., Itoh N., Kanekiyo M., Tominaga S., Kohroki J., Hwang G.S.,
Nakanishi T., Muto N., Tanaka K.;
"Two metallothioneins in the fresh-water fish, crucian carp (Carassius
cuvieri): cDNA cloning and assignment of their expression isoforms.";
Biol. Pharm. Bull. 23:145-148(2000).
                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Actinopterygii, Neopterygii, Teleostei, Ostariophysi, Cypriniformes,
Cyprinidae, Carassius.
NCBI_TaxID=52617,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ren H.W., Itoh N., Kanekiyo M., Tominaga S., Kohroki J., Hwang G.S., Nakanishi T., Muto N., Tanaka K.;
Submitted (Cort-2002) to the EMBL/GenBank/DDBJ databases.
EMBL, AXI65047; AAN86891; -.
SEQUENCE 60 AA; 5958 MW; 543F9410864BB701 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7;
                                                                                                                                                                                                             / Match 14.7%; Score 57.5; DB 13; Length 49; Local Similarity 34.9%; Pred. No. 5.4; nes 15; Conservative 4; Mismatches 17; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 13; Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17; Indels
                                                                                                                                                                                                                                                                        7 GGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCR 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7 GGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCR 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15 GATCKĆ-TŃCQCTTCKKSCCSCCPSGCSK-----CASGCVCK 50
                                                                                                                                                                                         49 AA; 4803 MW; AFCDC7534D883CBA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (TrEMBLrel. 22, Created)
(TrEMBLrel. 22, Last sequence update)
(TrEMBLrel. 23, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                           01-WAR-2003 (TrEMBLrel. 23, Created)
01-WAR-2003 (TrEMBLrel. 23, Last sequence update)
01-WAR-2003 (TrEMBLrel. 23, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
14.7%; Score 57.5; DE
Best Local Similarity 34.9%; Pred. No. 6.5;
Matches 15; Conservative 4; Mismatches
                                                                                                                                                                                                                                                                                                                                        60 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     [2]
SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                        Carassius cuvieri.
                                                                                                                                                                                                                                                                                                                                                                                              Metallothionein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-OCT-2002
01-OCT-2002
01-MAR-2003
                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                               Query Match
                                                                                                                                                                  NON TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QBJHC5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q8JHC5
                                                                                                                                                                                                                                                                                                                                        Q8AWG2
                                                                                                                                                                                                                           Best Loc
Matches
                                                                                                                                                                                                                                                                                                                  RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QBJHCS
                                                                                                                                                                                                                                                                                                                            Q8AWG2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                               임
```

```
November 17, 2003, 08:09:58; Search time 41 Seconds (without alignments) 259.382 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                              /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1997.DAT:*/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1998.DAT:*/SIDS1/gcgdata/geneseqgpeneseqp-emb1/AA1999.DAT:*/SIDS1/gcgdata/geneseqgpeneseqp-emb1/AA1999.DAT:*/SIDS1/gcgdata/geneseqg/geneseqgp-emb1/AA2000.DAT:*/SIDS1/gcgdata/geneseqg/geneseqgp-emb1/AA2002.DAT:*/SIDS1/gcgdata/geneseqg/geneseqgp-emb1/AA2002.DAT:*/SIDS1/gcgdata/geneseqg/geneseqp-emb1/AA2003.DAT:*/SIDS1/gcgdata/geneseqg/geneseqp-emb1/AA2003.DAT:*/SIDS1/gcgdata/geneseqg/geneseqp-emb1/AA2003.DAT:*
                                                                                                                                                   US-09-506-978-1
391
1 GGFGGLGGRGKCPSNEIFSR.....CRLGYLRNKKKVCVPRSKCG
                                                                                                                                                                                                                                                                                               631746
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                            1107863 seqs, 158726573 residues
                                                                                                                                                                                                                                                                                                                                                                       Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                           OM protein - protein search, using sw model
                                                                                                                                                                                                                BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                       Minimum DB seq length: 0
Maximum DB seq length: 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Title:
Perfect score:
                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                    Database :
                                                                                                                                                                                                                                                             Searched:
                                                                                                                                                                                     Sequence:
                                                                                           Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	Bee venom protein	Mature nematode ex	N. americaun nemat	Mature nematode ex	Trout metallothion	Human ORF1805 prot	Consensus segmence	Arabidopsis thalia	Human factor IX (h
SUMMARIES	a	ABB08330	AAY30434	AAB15319	AAY30433	AAY57812	ABP32832	ABB77804	AA021321	AAB60286
	DB	23	20	21	20	21	23	23	23	22
	Query Match Length DB ID	67	61	61	58	59	59	62	63	43
dŧ	Query	100.0	21.0	21.0	17.4	16.2	16.2	16.0	16.0	15.9
	Score	391	82	82	68	63.5	63.5	62.5	62.5	62
	Result No.	-	7	m	4	ഗ	9	7	89	6

Rabbit liver metal Metallothionein do Factor IXa catalyt Human Secreted pro Propionibacterium Human ORFX protein	Novel human secret Human metallothion KTX peptide used t Human polypeptide Hypoxia-regulated Prophonibacterium Hypoxia-remulated	MyDolariedualeu Human protein SEQ N-terminal sequenc Sequence encoded b Partial sequence o Human polypeptide Sequence of human Human metallothion	Human metallothion Human metallothion Human protein SEQ Hypoxia-regulated Amino acid sequenc Human ORFX protein Beta-cellulin mute	Beta-cellulin mute Beta-cellulin mute Beta-cellulin mute Beta-cellulin mute Beta-cellulin mute Beta-cellulin mute Metallothionein fr Metallothionein fr
AAY57822 AA811455 AAY04648 AAB44778 AAU45263 ABP01364 ABP01389	AAU2813 AAW6160 AAX0208 AAM4026 ABP6513 AAU4879	AAM 991 AAY 6921 AAP 40692 AAP 4020 AAM 3914 AAK 4020	AAB1258 AAY8235 AAM7843 ABP6515 ABB0981 ABB1250	
	61 22 20 61 22 61 22 61 22 61 22 61 22 61 23 61 23 61 23 61 23 61 23 61 23 61 23 61 23 61 61 61 61 61 61 61 61 61 61 61 61 61	1000000	611 21 21 21 21 21 21 21 21 21 21 21 21 2	- C & & & & C & A
	9.5 15.2 59 15.1 8.5 15.0 8.5 15.0 8.5 15.0 7.5 14.7		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	ા વા વ વ વ વ વ ગં બ બ બ બ બ બ ગં બ બ બ બ બ બ

ALIGNMENTS

```
Bee venom; isoform; immunosuppressant; vaccine; Api m 6; immune response; bee venom hypersensitivity; antibody; protein purification; Api m 6.01; immunotherapy; allergen.
                                                                                                                                                                                                                     (ECOL-) ECOLE POLYTECHNIQUE FEDERALE LAUSANNE.
        ABB08330 standard; protein; 67 AA.
                                                                 Bee venom protein Api m 6.01.
                                                                                                                                                                               16-FEB-2001; 2001WO-IB01736.
                                                                                                                                                                                                   18-FEB-2000; 2000US-0506978.
                                               (first entry)
                                                                                                                                                                                                                                                           WPI; 2002-082988/11.
                                                                                                                                           WO20018B085-A2.
                                              18-JUN-2002
                                                                                                                                                             22-NOV-2001.
                                                                                                                                                                                                                                         Spertini F;
                            ABB08330;
                                                                                                                          Apis sp.
ABB08330
ID ABB0
```

New bee venom polypeptides, useful for modulating immune responses e.g. in individual hypersensitive to the venom and for identifying

```
Disclosure; Columns 143-144; 197pp; English.
                                                                                                                                                                                                                                                                                                                                                                           AAB15319 standard; Protein; 61 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Stanssens PEH,
                                                                                                                                                                                                                                                       21.0%;
30.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97US-0809455.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0249451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     95US-0461965
95US-0465380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      95WO-US13231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          95US-0486397
95US-0486399
                                                                                                                                                                                                                                                                                                                                                                                                                     19-DEC-2000 (first entry)
                                                                                                                                                                                                                                           Query Match
Best Local Similarity 30.5%
Best Local 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Messens JHL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (CORV-) CORVAS INT INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2000-531359/48.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Necator americanus
                                                                                                                                                                                                                                  61 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-PSDB; AAA73383.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Lauwereys MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US6087487-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17-APR-1997;
18-OCT-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          05-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17-0CT-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      05-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 05-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bergum PW,
                                                                                                                                                                                                            activity.
                                                                                                                                                                                                                                                                                                                                                                                                 AAB15319;
                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                      RESULT 3
  % X D D D D D D D D D D D D D D D D D X X X
                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                   designated Api m 6.01. The sequence represents the central mains acid designated Api m 6.01. The sequence represents the central mains acid ABB08333). The specification describes a substantially pure polypeptide, Api m 6, derived from bee venom and found in four isoforms. The proteins of the invention have immunosuppressant activity and may form the basis of a vaccine. Api m 6 is useful for modulating an immune response, i.e. as an allergen for immunocherapy. The protein is useful for identifying an individual at risk for bee venom hypersensitivity. The method response raised, where a detectable immune response indicates that the individual is at risk for bee venom hypersensitivity. Antibodies specific for Abi m 6 are useful for purifying the protein.
                                                                                                                                                                                                                                                                             GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIXICAPGCVCRLGYLRNKKKVC 60
                                                                                                                                                                                                                                                               1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC 60
                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Screening an isolated protein for Nematode-extracted Anticoagulant
Protein domains
                                           The present sequence is that of one the four isoforms of Api m 6,
                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nematode extracted anticoagulant protein; NAP; anticoagulant; serine protease inhibitor; NAP domain; factor VIIa/TF.
                                                                                                                                                                                                                      DB 23; Length 67;
                                                                                                                                                                                                                                            0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mature nematode extracted anticoagulant protein NamNAP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Jespers LS, Laroche YR;
Moyle M, Stanssens PEH;
individual at risk for bee venom hypersensitivity
                                                                                                                                                                                                                    100.0%; Score 391; DB 23; 100.0%; Pred. No. 8.9e-32; ive 0; Mismatches 0;
                      Example 2; Page 26; 32pp; English.
                                                                                                                                                                                                                                                                                                                                                                                      AAY30434 standard; Protein; 61 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             96US-0634641.
94US-0326110.
95US-0461965.
95US-0465380.
95US-0486397.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pergum PW, Gansemans YGJ,
Lauwereys MJ, Messens JHL,
Vlasuk GP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          96US-0634641.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     95US-0486399.
                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                           67; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INT INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1999-539569/45.
                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                           61 VPRSKCG 67
                                                                                                                                                                                                                                                                                                                               67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Necator americanus
                                                                                                                                                                                                67 AA;
                                                                                                                                                                                                                                                                                                                             VPRSKCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (CORV-) CORVAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19-APR-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                15-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17-0CT-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JS5955294-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19-APR-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18-OCT-1994)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              05-JUN-1995
05-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      05-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                           AAY30434;
                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                               RESULT 2
                                                                                                                                                                                                                                                                                                                                                                           AAY30434
                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                              DD.
```

```
The present sequence represents a nematode extracted anticoagulant protein has activity as an anticoagulant and/or serine protein (NAP). The protein has activity as an anticoagulant and/or serine protease inhibitor. The protein contains at least one NAP domain which has selective inhibitory activity for factor VIIa/TF. The specification of ascentibes a method for screening an isolated protein at least one domain for factor VIIa/TF selective inhibitory activity. The method comprises determining the time to clotting effected by a concentration of the concentration of the concentration of the concentration of the concentration of the protein in an ex vivo prothrombin time (PT) assay and an ex vivo activated partial thromboplastin time (PT) assay; and an ex vivo prothrombin time (PT) assay and an ex vivo prothrom of clotting effected by the isolated protein in each of the PT and apPT assay, with respect to a baseline clotting value for each assay, where prolongation of clotting is deemed a two-fold elevation; and calculating a PT to aPTT prolongation ratio, where a ratio at least cone is indicative of factor VIIa/TF inhibitory activity. The method is cone is indicative of factor VIIa/TF inhibitory activity. The method is arrivity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Moyle M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 CPANEBWRECGTPCEPKCNQPMP-----DICTMNCIVDVCQCKEGYKRHETKGCL 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nematode-extracted anticoagulant protein; NamNAP; blood clotting;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12 CPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCV----CRLGYLRNKKKVCV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New cDNA molecule encoding a protein having factor Xa inhibitory activity for preventing and treating blood clotting disorders, comprises nematode-extracted anticoagulant protein domains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19; Indels 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N. americaun nematode-extracted anticoagulant protein NamNAP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gansemans YGJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20; Length 61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PEH, Jespers LS, Ganse
LaRoche YR, Vlasuk GP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 82;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       canine hookworm; thrombosis; vaccine
```

```
anticogulant protein NamnAP. Proteins of this kind have been shown to be effective at preventing blood clotting without causing excessive bleeding. The protein can be used in blood collection tubes to aid the isolation of plasma from the blood, to prevent thrombosis which may be linked to the rupture of an atherosclerotic plaque, acute myocardial infarction, angina, thrombolytic therapy, percutaneous transluminal coronary angioplasty, dissemband intravascular coaqulopathy, infection, cancer and septic shock, and to produce antibodies. In the latter instance, the antibodies can be raised in order to detect infection by nematodes (the coding sequence can also be used for this) or as diagnostic tests. The protein can also be used as a vaccine against
                                                                                                                                                                                                                                                                                                                   CPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCV----CRLGYLRNKKVCV 61
                                                                                                                                                                                                                                                                                                                                       4 CPANEEWREGGTPCEPKCNQPMP----DICTMNCIVDVCQCKEGYKRHETKGCL 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Screening an isolated protein for Nematode-extracted Anticoagulant
                                 nematode-extracted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nematode extracted anticoagulant protein; NAP; anticoagulant; serine protease inhibitor; NAP domain; factor VIIa/TF.
                                                                                                                                                                                                                                                             Score 82; DB 21; Length 61;
Pred. No. 0.43;
                                                                                                                                                                                                                                                                                         19; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mature nematode extracted anticoagulant protein HpoNAP5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Jespers LS, Laroche YR;
Moyle M, Stanssens PEH;
                             The present sequence is the Necator americanus
                                                                                                                                                                                                                                                   Disclosure; Columns 143-144; 197pp; English.
Disclosure, Fig 16; 197pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                  AAY30433 standard; Protein; 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    95US-0461965.
95US-0465380.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bergum PW, Gansemans YGJ,
Lauwereys MJ, Messens JHL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96US-0634641.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94US-0326110.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                95US-0486397.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           96US-0634641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            95WO-US13231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Heligmosomoides polygyrus.
                                                                                                                                                                                                                                                                                         17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (CORV-) CORVAS INT INC.
                                                                                                                                                                                                   nematode parasites.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 1999-539569/45.
                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                 61 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Protein domains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19-APR-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USS955294-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18-OCT-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19-APR-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17-0CT-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     05-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                05-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 05-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Vlasuk GP;
                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                               AAY30433;
                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                    AAY30433
 a
a
                                                                                                                                                                                                                                                                                                                  ò
```

serine

protein (NAP). The protein has activity as an anticoagulant and/or serir protease inhibitor. The protein contains at least one NAP domain which has selective inhibitory activity for factor VIIa/TF. The specification

sequence represents a nematode extracted anticoagulant

describes a method for screening an isolated protein at least one domain for factor VIIa/TF selective inhibitory activity. The method comprises determining the time to clotting effected by a concentration of the isolated protein in an ex vivo prothrombin time (PT) assay and an ex vivo prothrombin time (PT) assay and an ex vivo prolongation of clotting effected by the isolated protein in each of the PT and aPTT assay, with respect to a baseline clotting value for each assay, where prolongation of clotting is calculated as fold elevation of clotting time relative to a baseline clotting value, where calculating of clotting time is deemed a two-fold elevation, and calculating a PT to aPTT prolongation ratio, where a ratio at least one is indicative of factor VIIa/TF inhibitory activity. The method is useful for determining if a protein has factor VIIa/TF inhibitory genus Chilamydomonas comprising reproductive genetic material comprising a nuclectide sequence capable of expressing chicken type I Metallothionein. Also described is a method of removing metal from an aqueous medium containing at least one dissolved or suspended metals. The transgenic algae are used for the selective separation of metals, particularly the separation of precious and desirable metals such as gold and uranium, from other metals such as cadmium, airc and copper. The method can be used to facilitate the selective recovery of precious and rare metals from mineral sources where aqueous media can be used, such as in natural surface water flows, ground water and where water may be introduced. The method is suitable for well-drilling, soil and water remediation arts, mining fields, and industrial engineering. The present sequence represents a class I metallothionein Metallothionein; metal recovery; remediation; heavy metal; precious metal; phytochelatin; green algae; Chlamydomonas reinhardtii. Gaps 12 CPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKC 66 The present invention describes a transgenic algal cell (I) of the genus Chlamydomonas comprising reproductive genetic material compri-CGPNEBYTECGTPCEPKCNEPMPDICTLNCIVNVCQCKPGFKRGPKGCVAPGPGC ö Novel method for metal recovery, remediation and separation Score 68; DB 20; Length 58; Pred. No. 10; Pred. No. 10; 7; Mismatches 34; Indels Trout metallothionein Class I amino acid sequence. ¥. (OHIS) UNIV OHIO STATE RES FOUND. Disclosure; Page 6; 86pp; English. AAY57812 standard; protein; 59 17.4%; 25.5%; 99WO-US12007. 98US-0087374. (first entry) 14; Conservative Traina SJ; WPI; 2000-086646/07. Query Match Best Local Similarity 58 AA; WO9960838-A1. 22-MAR-2000 28-MAY-1999; 28-MAY-1998; 02-DEC-1999. Sayre RT, activity. Sequence AAY57812; Salmo sp. Matches 셤 ઠ

.,

5

10;

```
Key
Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Domain
  8888888888888888888888888888888
                                                                                                                                                                                                                                                                                                                                                                                                        ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              designated ORF (open reading frame) 1-4534, and sequences ABN75054-ABN75054 represent cDNAs encoding them. The invention also encompasses polypeptides at least 80% identical to the ORF1-ORF4534 (collectively referred to as ORFX) proteins, polynucleotides at least 85% identical to the ORFX nucleic acid sequences, vectors and host cells comprising ORFX polynucleotides, the recombinant production of ORFX proteins, antibodies specific for ORFX proteins, methods of screening for modulators of ORFX expression or activity, and methods of screening individuals for a predisposition to an ORFX-associated disorder. The ORFX proteins of the invention have a wide range of biological activities, such as cytokine, cell proliferation,
                                                                                                                                                                                                                                                                                                                 Human; ORF; open reading frame; ORFX; drug screening; diagnosis; disease monitoring; cytokine; cell proliferation; cell differentiation; immune modulation; haematopoiseis regulation; tissue growth; angiogenesis; activin; inhibin; chemotactic; chemokinetic; heemostatic; thrombolytic; tumour inhibition; bodily characteristic; fertility; behaviour; cancer; proliferative disorder; neurological disorder; cardiovascular disease; immune system disorder; organ transplantation; tissue growth disorder; tissue regeneration disorder; diabetes mellitus; hypothyroidism; cholesterol ester storage disease; infection; vulnerary; wasotropic; antipsoriatic; antidiabetic; cytostatic; nootropic; neuroprotective; antidiabetic; antidiabetic; cytostatic; nootropic; cardiant; hypotenaive; antidiabetic; antidiabetic; antidiabetic; cardiamatory; immunomodulator; dermatological; analgesic; virucide; antibacterial; fungicide.
                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Novel human polypeptides and polynucleotides useful for diagnosing, preventing and treating cardiovascular disease, neurodegenerative, hyperproliferative disorders and disorders related to organ
                                                                                                              9
                                                                                                                                GSSCKC-SNCACTSCKKSCCPCCPSDCK-----CASGCVC-----KGKTC
                                                                                                            7 GGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequences ABP31028-ABP35561 represent 4534 novel human proteins
                                                                                     15;
                                                         DB 21; Length 59;
                                                    16.2%; Score 63.5; Dl
35.2%; Pred. No. 29;
ive 2; Mismatches
                                                                                                                                                                                                                                                                                           Human ORF1805 protein, SEQ ID NO:3610.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 10; Page 1162; 2508pp; English.
                                                                                                                                                                                                         ABP32832 standard; Protein; 59 AA
 given in the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24-MAY-2001; 2001WO-US17076.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24-MAY-2000; 2000US-206690P
                                                                                                                                                                                                                                                              (first entry)
                                                                   Local Similarity 35,2 les 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Shimkets RA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (CURA-) CURAGEN CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2002-106200/14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2002-106200/:
N-PSDB; ABN76858.
                            59 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              transplantation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200190366-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens.
                                                                                                                                                                                                                                                                09-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Leach MD,
                                                                                                                                                                                                                                     ABP32832;
                                                                                                                                        15
                              Sequence
                                                       Query Match
                                                                                Matches
                                                                                                                                                                                             ABP3283
                                                                                                                                                                                RESULT
                                                                                                                                      g
                                                                                                                                                                                                                        SXS
                                                                                                              ò
```

```
tissue growth, anglogenesis, activity thrombolytic activity, chemotactic, chemotactic activity, has activity thrombolytic activity, chemotactic, chemotactic activity, has activity, thrombolytic activity, chemotactic, chemotactic activity, has a may be used in the determination of bodily characteristics, fertility and behaviour. ORFX proteins, concleic acids and antibodies may be used in the treatment of cancers, cherry proliferative disorders such as psoriasis and benign tumours, cherry proliferative disorders such as psoriasis and benign tumours, cherry proliferative disorders such as psoriasis and benign tumours, cherry proliferative disorders such as psoriasis and benign tumours, cardiovascular diseases, immune system disorders, disorders related to organ transplantation, disorders of tissue growth and regeneration, disorders mellitus, hypothyroidism, and cholesterol ester corgan transplantation, disorders of tissue growth and regeneration, diseases, and infections diseases caused by viral, bacterial, thungal and other pathogens. OREX nucleic acused by viral, bacterial, chungal and other pathogens. OREX nucleic acused by viral, bacterial, continued to primers and probes, in the detection of OREX genomic sequences are provided in genetic diagnosis, and in forensic biology. The OREX nucleic acids may additionally be used to produce transgenic animals which may be useful for studying the function and/or activity of OREX protein, and in drug screening of OREX proteins may also be used as immunogens to generate specific antibodies, which are useful in the diagnosis, treatment and monitoring of OREX-associated diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A recombinant streptavidin-metallothionein chimeric protein is useful to add or remove heavy metal ions into biotin-containing biological material, particularly for tumour imaging, radiotherapy, and DNA or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Streptavidin; metallothionein; heavy metal ion; tumour cell imaging;
cell differentiation, immune modulation, haematopoiesis regulation,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16.2%; Score 63.5; DB 23; Length 59; 28.9%; Pred. No. 29; ive 7; Mismatches 12; Indels 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAVCPPVCAAVCLPVCVQLCVSMCVC-----LCWHATMC 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25 CORFCPNV -- - VPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Consensus sequence of mammalian metallothionein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                biotin; radiotherapy; mass spectrometry.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "alpha domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note≈ "beta domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABB77804 standard; Protein; 62 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cantor CR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   91US-0780717.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   91US-0780717.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27-SEP-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity 28.9
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (REGC ) UNIV CALIFORNIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30..62
/note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2002-488386/52.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Glazer AN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       59 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                material, particu
protein labeling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US6391590-B1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21-OCT-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21-OCT-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21-MAY-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABB77804;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mammalia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sano T,
```

<u>ب</u>

```
used to produce chimeric protein of the invention. The specification describes a recombinant bifunctional streptavidin-metallothionein chimeric protein. This protein is produced by introducing into a host cell mucleic acid encoding a brifunctional fusion protein having a streptavidin and a metallothionein moiety, and incubating the cell to streptavidin and extraction protein. The streptavidin moiety consists of residues 16-133 of mature streptavidin. The chimeric protein is used to incorporate heavy metal ions into biological materials containing biotin, or to remove heavy metal ions from the biological material. Specific uses include loading cancerous tissue with heavy metal ions for include loading cancerous tissue with heavy metal ions for ingent tumour cells and radiotherapy, and labeling DNA and proteins for detection on gels or blots by surface scanning mass spectrometry.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention relates to an isolated polynucleotide encoding a polypeptide which is related to potato snakin antimicrobial protein and GASA4 or GASA5 or GAST1 homologues, which is referred to as lysine- and cysteine- rich peptides (KCP)-like polypeptide, having a nucleotide sequence from 36 sequences of defined base pairs, given in the specification. A recombinant expression cassette comprising the isolated polynucleotide of the invention is useful for modulating the level of (KCP)-like polypeptides in a plant cell, where the level of (KCP)-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Antimicrobial; transgenic; plant; potato snakin antimicrobial protein; GASA4; GASA5; GAST1 homologue; lysine- and cysteine- rich peptide; KCP-like polypeptide; modulating; disease resistance.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New polynucleotide encoding lysine- and cysteine-rich peptides-like polypeptide useful for modulating the polypeptide level in a plant
                                                           The present sequence represents mammalian metallothionein. It is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10 GGSCTCAGSCKCKECKCTS-CKKSCCSCCP----VGCAK-CAQGCVCKAG 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Arabidopsis thaliana KCP-like protein, SEQ ID NO 76.
                                                                                                                                                                                                                                                                                                                                                                                   ; Score 62.5; DB
; Pred. No. 38;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure; Page 154; 163pp; English.
                   Disclosure; Column 3; 9pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cell, enhancing disease resistance
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Navarro Acevedo PA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (PION-) PIONEER HI-BRED INT INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAO21321 standard; Protein; 63
                                                                                                                                                                                                                                                                                                                                                                               16.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13-SEP-2000; 2000US-232569P.
11-SEP-2001; 2001US-0950933.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13-SEP-2001; 2001WO-US28429.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Arabidopsis thaliana.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2002-425842/45.
                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                               62 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200222821-A2.
                                                                                                                                                                                                                                                                                                                                                                                              Local Sim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   05-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Simmons CR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA021321;
                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AA021321
X X X O D O O O O O O O O O O X X X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

```
The invention relates to nucleic acid sequences which regulate gene expression in an age-related manner and/or in a liver-specific manner. The invention identifies regions of the human factor IX (hFIX) gene, and a region of the human protein C (hFC) gene, which are age-related carejon of the human protein C (hFC) gene, which are age-related carejon of the position 2164-2165 of AAF54019) and are found in the 5' UTR (at position 2164-2165 of AAF54019). These elements act synexcistically concrease hFIX levels over the lifespan of an individual; however, they con increase hFIX levels over the lifespan of an individual; however, they compared the carefacted manner, with ABS' acting to stabilise hFIX mRNA, and AB3' acting to increase hFIX mRNA, and acting the head ordering the age-related regulatory sequences of the invention, along with their homologues, variants and fragments, may be used in the construction of recombinant expression vectors for the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Age-related gene regulation; liver-specific; gene expression; man factor IX; hFTX, ABS', AB3', age-regulatable expression construct; antisense therapy; gene therapy; thrombosis; cardiovascular disease; diabetes; Alzheimer's disease; Parkinson's disease; cancer; osteoporosis;
polypeptides is increased, and disease resistance is enhanced. This sequence represents a protein relating to the KCP-like proteins of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   expression of a desired sequence in an age-related fashion in a host cell. Preferred target genes for expression in such age-regulatable expression vectors include those encoding proteins involved in blood
                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New regulatory elements that control age-related gene expression, useful in gene therapy and for reducing Factor IX expression
                                                                                                                                                                                          'n
                                                                                                                                           23; Length 63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human factor IX (hFIX) exon-encoded fragment, SEQ ID NO:9.
                                                                                                                                                                                                                                      20 RCDGRCQRFCPNV-VPKP---LCIKICAPGCVCRLGYLRNKKVC 60
                                                                                                                                                                                                                                                                                  4 OCGGÓCTRRCSNTKYHKPCMPFCOKCCAK-CLCVPPGTYGNKOVC 47
                                                                                                                                                                                          19; Indels
                                                                                                                                           日日
                                                                                                                                                               39;
                                                                                                                                                                                       4; Mismatches
                                                                                                                                           Score 62.5;
Pred. No. 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure, Fig 8C; 225pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                     AAB60286 standard; Protein; 43 AA
                                                                                                                                           16.0%;
37.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  06-JUN-2000; 2000WO-US15728.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09-JUN-1999; 99US-0328925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                     17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ostecarthritis; dementia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kurachi K, Kurachi S;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (UNMI ) UNIV MICHIGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2001-061708/07.
                                                                                                                                      Query Match
Best Local Similarity
                                                                                             63 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-PSDB; AAF54018.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200075279-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14-DEC-2000.
                                                 invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAB60286;
                                                                                               Sequence
                                                                                                                                                                                          Matches
  ន្តដូនូនូន
                                                                                                                                                                                                                                      ઠ
                                                                                                                                                                                                                                                                                  셤
```

Э,

Gaps

7; 5

DB 23; Length 62; 23; Indels copper. The method can be used to facilitate the selective recovery of precious and rare metals from mineral sources where aqueous media can be used, such as in natural surface water flows, ground water and where water may be introduced. The method is suitable for well-drilling, soil and water remediation arts, mining fields, and industrial engineering. The present sequence represents a Class II metallothionein given in the present invention.

3,

Gaps

12;

Indels

10;

KCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCR 49

금

ð

61;

DB 21; Length

Score 62; DB 2 Pred. No. 42; 2; Mismatches

Query Match
Best Local Similarity 38.5%;

61 AA;

Sequence

888888888

```
coagulation (e.g., the pro-coagulants factor IX and factor VIII, and the anti-coagulants protein C and antithrombin III), human alpha-1-antitrypsin, PEA-3 protein and reporter proteins uch as alpha-1-antitrypsin, PEA-3 protein and reporter proteins uch as ludiferase. Preferred promoters for use in such age-regulatable corporation and promoter and the SP6 promoter. The expression vectors of the T3 promoter and the SP6 promoter. The expression vectors of the invention may be used in gene therapy to provide age-related and/or be used in the treatment of such age-related conditions such as thrombosis, cardiovascular disease, diabetes, Alzheimer's disease, Parkinson's disease, cancer, osteoporosis, osteoarthritis and dementia. Parkinson's disease, cancer, osteoporosis, osteoarthritis and dementia. Perkinson's they may be used to express factor IX antisense mRNA in the treatment of thrombotic conditions associated with the natural age-related rise in factor IX expression. Transgenic cells or animals associated vice age-related rise in factor IX expression. Transgenic cells or animals associated associated with the natural associated with the natural associated with the natural associated with the natural associated with the natural associated with associated with the natural associated with associated with the natural associated with associated with the natural associated with associated with associated with the natural associated with associated with the natural associated with associated with the natural associated with associated with the natural associated with the natural associated with the natural associated with the natural associated with the natural associated with the natural associated with the natural associated with the natural associated with the natural associated with the natural associated with the natural associated with the natural associated with the natural associated with the natural associated with the natural associated with the natural associated with the natural associated with the natural 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ñ
                                                                                                                                                                                                                                                                                                                                                                                               normal processes such as againg and gene expression. Fragments and homologues of age-related regulatory sequences, are useful as probes to detect, isolate or identify other such sequences in samples. The present sequence represents a fragment of hFIX.
                                                                                                                                                                                                                                                                                                                                                                        diseases, in screening for potential therapeutic agents and for studying
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Metallothionein; metal recovery; remediation; heavy metal;
precious metal; phytochelatin; green algae; Chlamydomonas reinhardtii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      metallothionein Class II amino acid sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22 DGRCQRFCPNVVPKPLCIKICAPGCVCRLGY-LRNKKKVCVP 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 62;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAY57822 standard; protein; 61 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (OHIS ) UNIV OHIO STATE RES FOUND.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-US12007.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98US-0087374.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity 33.33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Metallothionein; metal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Oryctolagus cuniculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Traina SJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          43 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rabbit liver
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9960838-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sayre RT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAY57822;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAY57822
       $5555555555555555555555555888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
```

```
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Isolated cDNAs encoding TANGO 244, TANGO 246, TANGO 275, TANGO 300 and MANGO 245 proteins, useful in the treatment of inflammatory diseases (e.g. idiopathic ulcerative colitis), tumors, renal disorders and liver
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The present invention relates to cDNAs encoding TANGO 244,
TANGO 246, TANGO 275, TANGO 300 and MANGO 245 proteins.
The mudleic acids, proteins and protein modulators are useful for treating colonic disorders, inflammatory diseases, tumors, renal disorders, liver disorders, lung disorders, autoimmune diseases, allergic diseases, cardiovascular diseases, brain disorders, degenerative diseases placental, pancreatic, skeletal and muscle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC
                                                                                                                                                                                                 TANGO; MANGO; colon; inflammation; tumor; renal; liver; lung; autoimmune; allergy; cardiovascular; brain; degenerative; placental;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
Query Match 15.7%; Score 61.5; DB 22;
Best Local Similarity 31.7%; Pred. No. 51;
Matches 19; Conservative 5; Mismatches 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Sharp JD;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Holtzman DA, Barnes TM, Fraser CC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; Fig 13; 262pp; English.
                                                                                 AAB61455 standard; protein; 67 AA.
                                                                                                                                                                     Metallothionein domain consensus.
                                                                                                                                                                                                                                 pancreatic; skeletal; muscle
                                                                                                                                                                                                                                                                                                                                                                                                            (MILL-) MILLENNIUM PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                99US-0342687.
                                                                                                                                                                                                                                                                                                                                                   29-JUN-2000; 2000WO-US18184.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ..
                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             disorders (e.g. jaundice)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2001-050127/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67 AA;
                                                                                                                                                                                                                                                                                          WO200100672-A1.
                                                                                                                                          04-APR-2001
                                                                                                                                                                                                                                                                                                                                                                               29-JUN-1999;
                                                                                                                                                                                                                                                                                                                       04-JAN-2001.
                                                                                                                                                                                                                                                             Synthetic.
                                                                                                             AAB61455;
         25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                     RESULT 11
       셤
                                                                                             ઠ
```

The present invention describes a transgenic algal cell (I) of the genus Chlamydomonas comprising reproductive genetic material comprising a nucleotide sequence capable of expressing chicken type I Metallothionein. Also described is a method of removing metal from an aqueous medium containing at least one dissolved or suspended metal. The transgenic algae are used for the selective separation of metals, particularly the separation of precious and desirable metals such as gold and uranium, from other metals such as cadmium, zinc and

Novel method for metal recovery, remediation and separation

WPI; 2000-086646/07.

The present invention describes a transgenic algal

Disclosure; Fig 1; 86pp; English.

AAB44778 standard; Protein; 56 AA

RESULT 13

AAB44778;

```
Receptor; catalytic domain; Factor IXa; Factor Xa; tissue factor; angina; blood clotting disorder; thrombosis; restenosis; myocardial infarction, reclosure; cerebrovascular disease; hypercoagulability; anticoagulant; peripheral arterial occlusive disease; pulmonary embolism; cyclic.
                63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of interacting with an internal receptor in the catalytic domain of actor IXA (FIXA) or Factor X (FX) defined by the residues 11e290, Ala291, Asp292, Tyr293, Thr294, Thr394 and Phe378 of FIXA, and Leu300, Pro301, Glu302, Trp305, Ala306, Lyss85 and Phe389 of Fixa, or the ligand defined by residues Cys95-Cys99 of Fixa or Cys96-Cys100 of Fxa. The compounds can be used to prevent the formation of a functional FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FVIIIA/FIXA or FV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Peptides AAY04625-Y04647 represent claimed compounds which are capable
GGSCTCGTSCKCKNCKCTS-CKKSCCSCCPAGCSK-----CAGGCVCKGGGAASETSKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         They can also be used to prevent the occurrence of blood clotting disorders caused by e.g. grafting surgery, years wall not any
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           caused by e.g. grafting surgery, vessel wall potency
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Factor VIIIa interacting domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Factor IXa catalytic and interacting domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "catalytic domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                 AAY04648 standard; peptide; 47 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure, Fig 1; 50pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Fischer PM, Sakariassen KS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98WO-GB02700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97GB-0019157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New anticoagulant compounds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (MATT/) MATTHEWS D P. (NYCO-) NYCOMED IMAGING AS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "
13..29
14..16
/note= '
31..44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   restoration or sepsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1999-215061/18.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        47 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disulfide-bond
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Disulfide-bond
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disulfide-bond
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO9913062-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           08-SEP-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      09-SEP-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18-MAR-1999.
                                                                                                                                                                                                                                                                                                                                                                      AAY04648;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Domain
                                                                                                                                                                                                               AAY04648
```

```
The polymuclecutes sequences given in the polymuclecutes sequences ago the polymuclecutes of the polymuclecutes given in AAB44762 to AAB44811. AAB44812 to AAB44829 represent human secreted polypebtide sequences and proteins homologous to them, which are used in the exemplification of the present invention. Human secreted proteins have activities based on the tissues and cells the genes are expressed in. Examples of activities are: immunosuppressive; aniarthritic; antirheumatic; antiproliferative; cytostatic; cardiant; vasotropic; erebroprotective; nootropic; neuroprotective; antibacterial; virucide; fungicide; and optibalmological. The polymucleotides and polypeptides can be used to prevent, treat or ameliorate a medical condition in e.g. humans, mice, rabbits, goats, horses, cats, dogs, coinchens or sheep. They are also used in diagnosing a pathological condition or susceptibility to a pathological condition. Disorders which are diagnosed or treated include pathological condition.
                                                                                                                                                     antificumatic; antiproliferative; cytostatic; cardiant; vasotropic; derebroprotective; noctropic; neuroprotective; antibacterial; virucide; funglicide; opthhalmological; gene therapy; autoimmune disease; infection; hyperproliferative disorder; cardiovascular disorder; angiogenesis; cerebrovascular disorder; nervous system disorder; ocular disorder; wound healing; skin aging; food additive; preservative.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      disorders, infections caused by bacteria, viruses and fungi and ocular disorders. The polypeptides can also be used to aid wound healing and epithelial cell proliferation, to prevent skin aging due to sunburn, to maintain organs before transplantation, for supporting cell culture of primary tissues, to regenerate tissues and in chemotaxis. The polypeptides can also be used as a food additive or preservative to increase storage capabilities, AAC79790 to AAC79798 and AAB44761 represent sequences used in the exemplification of the present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nucleic acid encoding human secreted proteins, used to treat, prevent, ameliorate or diagnose medical conditions such as cancer, and
                                                                                                                                       secreted protein; diagnosis; immunosuppressive; antiarthritic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               polynucleotide sequences given in AAC79799 to AAC79848 encode the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          autoimmune diseases, hyperproliferative disorders, cardiovascular disorders, cerebrovascular disorders, angiogenesis, nervous system
                                                                                          Human secreted protein sequence encoded by gene 17 SEQ ID NO:77.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Komatsoulis G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 11; Page 362; 391pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                      23-MAR-2000; 2000WO-US07726.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       07-JAN-2000; 2000US-0174877.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99US-0126597
                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rosen CA, Ruben SM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-602355/57.
N-PSDB; AAC79815.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ameliorate or diagno
autoimmune diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          56 AA;
                                                                                                                                                                                                                                                                                                                                                             WO200058336-A1.
                                                                                                                                                                                                                                                                                                                   Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26-MAR-1999;
                                              12-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                         05-OCT-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
```

Length

DB 21;

Score 61;

15.6%;

Query Match

<u>د.</u>

Gaps

., 8

15; Indels

4; Mismatches

14; Conservative

23 13

ð a

Local Similarity

Best Loca Matches

Query Match

GRCEQFCKNSADNKVV-----CSCTEGYRLAENQKSCEP 46 GRCORFCPNVVPKPLCIKICAPGCVCRLGY-LRNKKKVCVP 62

Score 61; DB 20; Length 47; Pred. No. 42;

15.6%; 34.1%;

4.

Gaps

12;

Indels

27;

Mismatches

9

ilarity 31.8%; Conservative

Pred. No.

à g

```
Best Local Similarity
                                            Matches
                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                         ð
                                            3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequences AAU39105-AAU68017 represent Propionibacterium acnes immunogenic the treatment, prevention and diagnosis of medical conditions caused in E. treatment, prevention and diagnosis of medical conditions caused by P. acres The disorders include SAPHO syndrome (synovitis, acne, pustulosis, hypertosis and osteomyelitis), uveitis and endophthalmitis. P. acres is also involved in infections of bone, joints and the central nervous system, however it is particularly involved in the inflammatory lesions associated with acne vulgaris. A method for detecting the presence or absence of P. acnes in a patient comprises contacting a sample with a binding agent that binds to the proteins of the invention and determining the amount of bound protein in the sample. The polypeptides may be used as antigens in the production of antibodies specific, for P. acnes proteins. These antibodies can be used to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     downregulate expression and activity of P. acnes polypeptides and therefore treat P. acnes infections. The antibodies may also be used as diagnostic agents for determining P. acnes presence, for example, by enzyme linked immunosorbent assay (ELISA).

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SAPHO syndrome; synovitis; acne; pustulosis; hypertosis; osteomyelitis; uveitis; endophthalmitis; bone; joint; central nervous system; ELISA; inflammatory lesion; acne vulgaris; enzyme linked immunosorbent assay; dermatological; osteopathic; neuroprotectant.
                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Propionibacterium acnes polypeptides and nucleic acids useful for vaccinating against and diagnosing infections, especially useful for treating acne vulgaris -
                                            12;
                                                                                                                                                                           4 CVQACVHMC-----LCVHVCASVHVCECAYVH-----CVRECACG 38
                                                                                                        21 CDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bhatia A;
                                            18; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Propionibacterium acnes immunogenic protein #6159.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wang SS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Persing DH, Mitcham JL, Wang SK
e J, Zhang Y, Jen S, Carter D;
29.8%; Pred. No. 49; ive 3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Example 1; SEQ ID No 6458; 1069pp; English.
                                                                                                                                                                                                                                                                                                                                                              AAU45263 standard, Protein, 66 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-APR-2000; 2000US-199047P.
02-JUN-2000; 2000US-208841P.
07-JUL-2000; 2000US-216747P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20-APR-2001; 2001WO-US12865.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                            14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Propionibacterium acnes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2001-616774/71.
   Best Local Similarity
Matches 14: Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              L'maisonneuve J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        66 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-PSDB; AAS59525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200181581-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-NOV-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Skeiky YAW,
                                                                                                                                                                                                                                                                                                                                                                                                                                    AAU45263;
                                                                                                                                                                                                                                                                                                                        AAU45263
```

15.6%; Score 61; DB 22; Length 66;

Query Match

```
The present invention describes substantially purified human proteins (referred to as open reading frame, ORFX, where X is 1-11491 (see Table 1 in the specification). ABNI5762 to ABNI2752 encode the human ORFX proteins given in ABP0010 to ABP11500. ORFX proteins are useful for treating or preventing a pathology associated with an ORFX-associated disorder in humans, and in the manufacture of a medicament for treating a syndrome associated with ORFX-associated disorder. ORFX polynucleotide sequences can be used in gene therapy. ORFX sequences can be used in the treatment of cancer, hyperproliferative disorders, orthogosis of liver, ostociatis, benign tumours, keloid, degenerative disorders, incorporative disorders related to organ transplantation, cardiovascular diseases, disorders related to organ response to the cardiovascular diseases, disbetes mellitus, systemic
                                                                                                                                                                                                                                                                                                                                                                                                                           Human; open reading frame; ORFX; gene therapy; cancer; cirrhosis; hyperproliferative disorder; psoriasis; benign tumour; haemorrhage; degenerative disorder; osteoarthritis; neurodegenerative disorder; cardiovascular disease; diabetes mellitus; systemic lupus erythematosus; hypertension; hypothyroidism; cholesterol ester storage disease; hypertension; hypothyroidism; cholesterol ester storage disease; autoimmune disorder; infectious disease; autoimmune disorder; rheumatoid arthritis; autoimmune thyroiditis; myasthenia gravis.
2 GFGGLGGRGKC---PSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKK 58
                            lupus erythematosus, hypertension, hypothyroidism, cholesterol ester storage disease, various immune deficiencies and disorders, infectious diseases, autoimmune disorders such as multiple solerosis, rheumatoid arthritis, autoimmune thyroiditis, myasthenia gravis, graft-versus-host disease and autoimmune inflammatory eye disease. OREX proteins are also useful for treating burns, incisions, ulcers, for treating osteoporosis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Novel human polypeptides and polymuclectides useful for diagnosing, preventing and treating cardiovascular disease, neurodegenerative, hyperproliferative disorders and autoimmune disorders
                                                                                                                                                                                                                                                                                                                                                                                 Human ORFX protein sequence SEQ ID NO:2710.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; SEQ ID 2710; 1037pp; English.
                                                                                                                                                                                                                                            ABP01364 standard; Protein; 60 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-MAY-2000; 2000US-206132P.
29-AUG-2000; 2000US-228716P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-MAY-2001; 2001WO-US10836
                                                                                                                                                                                                                                                                                                                                    25-JUN-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Shimkets RA, Leach MD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (CURA-) CURAGEN CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2002-106308/14.
                                                                                        64
                                                                                                                                58 PCQPPS 63
                                                                                    59 VCVPRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-PSDB; ABN17116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200192523-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        06-DEC-2001.
                                                                                                                                                                                                                                                                                          ABP01364;
                                                                                                                                                                                                    RESULT 15
                                                                                                                                                                                                                           ABP01364
```

```
Cc bone degenerative disorders, or periodontal disease, and for gut
Cprotection or regeneration and treatment of lung or liver fibrosis,
Cr reperfusion injury in various tissues and conditions resulting from
Cs systemic cytokine damage.
CN B. The sequence data for this patent did not form part of the printed
CC Specification, but was obtained in electronic format directly from WIPO
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int/pub/published_pot_sequences.
CC at ftp.wipo.int.published_pot_sequences.
CC at
```

```
Sequence 1, Appl
                                                                                                                                                                                                                                    November 17, 2003, 08:16:59; Search time 29 Seconds (without alignments) 421.775 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Published Applications AA:*

1: \cgn2_6\ptodata/2\pubpaa/USO7_PUBCOMB.pep:*

2: \cgn2_6\ptodata/2\pubpaa/PCT_NEW PUB.pep:*

3: \cgn2_6\ptodata/2\pubpaa/PCT_NEW PUB.pep:*

4: \cgn2_6\ptodata/2\pubpaa/USO6_REW_PUB.pep:*

5: \cgn2_6\ptodata/2\pubpaa/USO7_NEW PUB.pep:*

6: \cgn2_6\ptodata/2\pubpaa/USO7_NEW PUB.pep:*

7: \cgn2_6\ptodata/2\pubpaa/USO8_NEW PUB.pep:*

8: \cgn2_6\ptodata/2\pubpaa/USO8_REW_PUB.pep:*

9: \cgn2_6\ptodata/2\pubpaa/USO8_PUBCOMB.pep:*

10: \cgn2_6\ptodata/2\pubpaa/USO8_PUBCOMB.pep:*

11: \cgn2_6\ptodata/2\pubpaa/USO8_PUBCOMB.pep:*

12: \cgn2_6\ptodata/2\pubpaa/USO8_PUBCOMB.pep:*

12: \cgn2_6\ptodata/2\pubpaa/USO6_PUBCOMB.pep:*

13: \cgn2_6\ptodata/2\pubpaa/USO6_PUBCOMB.pep:*

14: \cgn2_6\ptodata/2\pubpaa/USO8_PUBCOMB.pep:*

15: \cgn2_6\ptodata/2\pubpaa/USO8_PUBCOMB.pep:*

16: \cgn2_6\ptodata/2\pubpaa/USO8_PUBCOMB.pep:*

16: \cgn2_6\ptodata/2\pubpaa/USO8_PUBCOMB.pep:*

16: \cgn2_6\ptodata/2\pubpaa/USO8_PUBCOMB.pep:*

17: \cgn2_6\ptodata/2\pubpaa/USO8_PUBCOMB.pep:*

18: \cgn2_6\ptodata/2\pubpaa/USO8_NEW_PUB.pep:*

19: \cgn2_6\ptodata/2\pubpaa/USO8_NEW_PUB.pep:*

10: \cgn2_6\ptodata/2\pubpaa/USO8_NEW_PUB.pep:*

11: \cgn2_6\ptodata/2\pubpaa/USO8_NEW_PUB.pep:*

12: \cgn2_6\ptodata/2\pubpaa/USO8_NEW_PUB.pep:*

13: \cgn2_6\ptodata/2\pubpaa/USO8_NEW_PUB.pep:*

14: \cgn2_6\ptodata/2\pubpaa/USO8_NEW_PUB.pep:*

15: \cgn2_6\ptodata/2\pubpaa/USO8_NEW_PUB.pep:*

16: \cgn2_6\ptodata/2\pubpaa/USO8_NEW_PUB.pep:*

17: \cgn2_6\ptodata/2\pubpaa/USO8_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                       US-09-506-978-1
391
1 GGFGGLGGRGKCPSNEIFSR.....CRLGYLRNKKWCVPRSKCG
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          666188 seqs, 182559486 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Listing first 45 summaries
                                                                                                                                                              - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0% Maximum Match 100%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum DB seq length: 0 Maximum DB seq length: 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score
                                                                                                                                                                  OM protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Result
```

```
1 Score Match Length DB ID Description

1 391 100.0 67 12 US-10-174-151-1 Sequence 1, Appli 2 19 30.4 67 12 US-10-087-887-40 Sequence 61, Appli 3 68 15.1 61 11 US-09-498-272-61 Sequence 61, Appli 68 15.1 60 9 US-09-190-264-59 Sequence 59, Appli 69 15.2 16.0 61 10 US-09-919-0199 Sequence 59, Appli 69 15.2 61 10 US-09-919-0199-195 Sequence 195, Appli 10 US-09-919-0199-195 Sequence 115, Appli 11 US-09-919-0199-195 Sequence 115, Appli 12 56.5 14.7 61 10 US-09-919-0195 Sequence 245, Appli 12 56.5 14.5 61 10 US-09-919-195 Sequence 245, Appli 12 56.5 14.5 61 10 US-09-919-353-12 Sequence 275, Appli 15 56.5 14.5 61 10 US-09-919-353-12 Sequence 272, Appli 56.5 14.5 61 10 US-09-919-353-12 Sequence 272, Appli 56.5 14.5 61 10 US-09-919-353-12 Sequence 272, Appli 56.5 14.5 61 10 US-09-919-353-12 Sequence 272, Appli 55.5 14.2 38 9 US-09-847-185-47 Sequence 272, Appli
```

Sequence 40, Application US/10087887 Publication No. US20030198957A1 GENERAL INFORMATION:

Sequence 47, Appl Sequence 11, Appl Sequence 229, App Sequence 2837, App Sequence 15, Appl Sequence 15, Appl Sequence 15, Appl Sequence 165, Appl Sequence 166, Appl Sequence 1417, Appl	-
15 US-10-224-286-47 10 US-09-817-647-11 11 US-09-817-647-11 12 US-09-817-645-11 13 US-10-136-573A-11 14 US-10-215-862-11 15 US-10-215-862-11 15 US-10-211-778-21 15 US-09-864-761-34995 11 US-09-864-761-34995 12 US-09-864-761-34995 13 US-09-864-761-34995 14 US-09-864-761-34995 15 US-09-864-761-34995 16 US-09-864-761-34995 17 US-09-962-756-1460 18 US-09-862-756-1460 19 US-09-962-756-1460 19 US-09-962-756-1460 19 US-09-962-756-1460 19 US-09-962-756-1460 19 US-09-962-756-1460 19 US-09-962-756-1470 11 US-09-962-756-1470 12 US-09-962-756-1470 12 US-09-962-756-1470	US-10-1 US-10-0 US-10-0 US-09-91
W 女 母 母 母 母 母 G G 母 母 母 母 母 日 G G G G G B 母 母 母 母 G G G G G G B 申 母 母 G G G B O O O O O O O O O O O O O O O O	5.88 5.78 4.0
5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	2.00
1111 1111 1111 1111 1111 1111 1111 1111 1111	. 4 4 4 4 1 5 6 4 8

ALIGNMENTS

```
o;
                                                                      APPLICANT: Spertini, Francois
APPLICANT: Spertini, Francois
TITLE OF INVENTION: NOVEL BEE VENOM POLYPEPTIDES AND METHODS OF USE THEREOF
FILE REFERENCE: 18519-001
CURRENT APPLICATION NUMBER: US/01/174,151
CURRENT FILING DATE: 2002-06-18
PRIOR APPLICATION NUMBER: US/09/506,978
PRIOR PILING DATE: 2000-02-18
NUMBER OF SEC ID NOS: 5
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Indels 0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%; Score 391; DB 12; Length 67; 100.0%; Pred. No. 2.3e-34; tive 0; Mismatches 0; Indels (
              ; Sequence 1, Application US/10174151; Publication No. US20030165514A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67; Conservative
                                                                                                                                                                                                                                                                                                                                                              ; ORGANISM: Apis mellifera
US-10-174-151-1
                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 VPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 VPRSKCG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-087-887-40
US-10-174-151-1
                                                                                                                                                                                                                                                                                               SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                       LENGTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
```

```
12 CPSNBIFSRCDGRCQRFCPNVVPKPLCIKICAPGCV----CRLGYLRNKKVCV 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4 CPANEEWRECGTPCEPKCNQPMP-----DICTMNCIVDVCQCKEGYKRHETKGCL 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Lauwereys, Marc Josef
Laroche, Yves Rene
Jespers, Laurent Stephane
Gansemans, Yannick Georges Jozef
Moyle, Matthew
Bergum, Peter W.
TITLE OF INVENTION: NEMATODE-EXTRACTED SERINE PROTEASE
PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21.0%; Score 82; DB 11; Length 61; 30.9%; Pred. No. 0.11; tive 9; Mismatches 19; Indels
                                                                                                                                                                                                                                                                                                                                  FILING DATE: October 17, 1995
FILING DATE: October 17, 1995
APPLICATION NUMBER: 08/486,399
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/486,397
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/465,380
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/326,110
APPLICATION NUMBER: 08/326,110
                                                                                                                    MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 60, Application US/09498272
Publication No. US20030113890A1
GENERAL INFORMATION:
APPLICANT: Vlasuk, George Phillip
Scanssens, Patrick Eric Hugo
Messens, Joris Hilda Lieven
                                                                                                                                                             COMPUTER: IBM Compatible
OPERATING SYSTEM: IBM P.C. DOS 5.0
SOFTWARE: Word Perfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/498,272
FILING DATE: 04-Feb-2000
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER: 216/270
TELECOMMUNICATION INFORMATION:
TELEPHONE: (213) 489-1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Necator americanus SEQUENCE DESCRIPTION: SEQ ID NO: 61:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: October 18, 1994
ATTORNEY/AGENT INFORMATION:
NAME: BIGGS, SUZANNE L.
REGISTRATION NUMBER: 30,158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX: (213) 955-0440
                                                                                                                                      storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEX: 67-3510 INFORMATION FOR SEQ ID NO: 61:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES: 356
                                                                                          COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY: linear
MOLECULE TYPE: peptide
ORIGINAL SOURCE:
                    STATE: California
CITY: Los Angeles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 30.93
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: amino acid
                                           COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-498-272-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-498-272-61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12 CPSNEIFSRCDGRCQRFCPN-----VVP-----KPLCIKICAPGCVCRLGYLRNKK-KV 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ch 30.4%; Score 119; DB 12; Length 67; 1 Similarity 37.3%; Pred. No. 1.4e-05; 25; Conservative 7; Mismatches 23; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Lauwereys, Marc Josef
Laroffe, Yves Rene
Jespers, Laurent Stephane
Jespers, Laurent Stephane
Gansemans, Yannick Georges Jozef
Moyle, Matthew
Bergum, Peter W
HITLE OF INVENTION: NEMATODE-EXTRACTED SERINE PROTEASE
                                                                                                                                                                                                              APPLICANT: Padigaru, Muralidhara
TITLE OF INVENTION: PROTEINS AND NUCLEIC ACIDS ENCODING SAME
FILE REFERENCE: 21402-285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTHER INFORMATION: Description of Artifical Sequence: US-10-087-887-40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INHIBITORS AND ANTICOAGULANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Stanssens, Patrick Eric Hugo
Messens, Joris Hilda Lieven
                                                                                                                                                                                                                                                                                 FILE REFERENCE: 14104-285

CURRENT FILING DATE: 2002-03-01

PRIOR PEDLICATION NUMBER: 06/273,049

PRIOR PELING DATE: 2001-03-02

PRIOR FILING DATE: 2001-03-02

PRIOR PELING DATE: 2001-03-29

PRIOR PELING DATE: 2001-03-29

PRIOR FILING DATE: 2001-03-21

PRIOR FILING DATE: 2001-03-21

PRIOR FILING DATE: 2001-03-21

PRIOR PILING DATE: 2001-04-03

PRIOR PILING DATE: 2001-04-03

PRIOR APPLICATION NUMBER: 60/281,864

PRIOR PILING DATE: 2001-04-10

PRIOR APPLICATION NUMBER: 60/282,864

PRIOR FILING DATE: 2001-04-09

PRIOR APPLICATION NUMBER: 60/282,537

PRIOR FILING DATE: 2001-04-09

PRIOR APPLICATION NUMBER: 60/282,537

PRIOR FILING DATE: 2001-04-09

PRIOR FILING DATE: 2001-04-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 356
CORRESPONDENCE ADDRESS:
ADDRESSEE: Lyon & Lyon
STREET: 633 West Fifth Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Vlasuk, George Phillip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 61, Application US/09498272
Publication No. US20030113890A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQ ID NOS: 104
SOFTWARE: CuraSeqList version 0.1
SEQ ID NO 40
                                                             Tonlinson, James B.
Topper, James N.
Shimkets, Richard A.
Leach, Martin D.
Zerhusen, Bryan D.
Komuves, Laszlo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Artificial Sequence
Conley, Pamela B.
Yang, Ruey-Bing
                                           Matthew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |||||:|
61 CVPRSEC 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60 CVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-498-272-61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                         APPLICANT:
APPLICANT:
                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

..

Gaps

```
SQUENCE 59.3-59
SQUENCE 59. Application US/10269353
Fublication No. US20030104447a1
GENERAL INFORMATION:
FUBLICATION NO. US20030104447a1
GENERAL INFORMATION:
APPLICANT: Holtzman, Douglas A.
APPLICANT: Goodearl, Andrew D.J.
APPLICANT: McCarthy, Sean A.
TITLE OF INVENTION: NOVEL GENES ENCODING PROTEINS HAVING
TITLE OF INVENTION: USES.
TITLE OF INVENTION: USES.
TITLE OF INVENTION: USES.
TITLE OF INVENTION: USES.
TITLE OF INVENTION: USES.
FILE REFERENCE: MPI2000-5380MICNIM
CURRENT FILING DATE: 2001-00-11
FRICR FILING DATE: 1099-04-23
FRICR FILING DATE: 1998-04-23
FRICR FILING DATE: 1999-06-22
FRICR FILING DATE: 1999-06-22
FRICR FILING DATE: 1999-06-22
FRICR FILING DATE: 1999-06-22
FRICR FILING DATE: 1999-06-22
FRICR FILING DATE: 1999-06-22
FRICR FILING DATE: 1999-06-22
FRICR FILING DATE: 1999-06-22
FRICR FILING DATE: 1999-06-22
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
FRICR FILING DATE: 1998-07-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16.1%; Score 63; DB 15; Length 60; 38.1%; Pred. No. 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 16.1%; Score 63; DB 9; Length 60; Best Local Similarity 38.1%; Pred. No. 11; Matches 16; Conservative 2; Mismatches 20; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10 GKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGC--VCR 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10 GKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGC--VCR 49
PRIOR FILING DATE: 1998-04-23
PRIOR APPLICATION NUMBER: US 09/298,531
PRIOR FILING DATE: 1999-04-23
PRIOR FILING DATE: 1999-04-23
PRIOR FILING DATE: 1998-04-23
PRIOR FILING DATE: 1998-04-23
PRIOR FILING DATE: 1998-06-22
PRIOR PILING DATE: 1998-06-22
PRIOR PLING DATE: 1999-06-22
PRIOR PLING DATE: 1999-06-22
PRIOR PLING DATE: 1999-07-29
PRIOR FILING DATE: 1998-07-29
PRIOR FILING DATE: 1998-07-29
PRIOR FILING DATE: 1998-07-29
PRIOR FILING DATE: 1998-07-29
NUMBER OF SEQ ID NOS: 68
SOFTWARE: PSELSEQ for Windows Version 4.0
SSEQ ID NO 59
LENGTH: 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; TYPE: PRT
; ORGANISM: Rattus norvegicus
US-09-790-264-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 16; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-269-353-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-269-353-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQ ID NO 59
LENGTH: 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Goodearl, Andrew D.J.
APPLICANT: Goodearl, Andrew D.J.
APPLICANT: McCarthy, Sean A.
TITLE OF INVENTION: NORTH GENES ENCODING PROTEINS HAVING
TITLE OF INVENTION: USES
TITLE OF INVENTION: USES
TITLE OF INVENTION: USES
TITLE OF INVENTION: USES
CURRENT APPLICATION NUMBER: US(09/790,264
CURRENT FILING DATE: 2001-02-21
PRIOR APPLICATION NUMBER: US 09/065,661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12 CPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCRLGYLRNKKKVCVPRSKC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
17.4%; Score 68; DB 11; Length 58;
Best Local Similarity 25.5%; Pred. No. 3.1;
Matches 14; Conservative 7; Mismatches 34; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: PCT/US95/13231
FILING DATE: October 17, 1995
APPLICATION NUMBER: 08/486,399
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/486,397
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/465,380
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/41,965
FILING DATE: October 18, 1994
                                                                                                                                                                                                                                                                                                MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Heligmosomoides polygyrus
SEQUENCE DESCRIPTION: SEQ ID NO: 60:
                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM Compatible
OPERATING SYSTEM: IBM P.C. DOS 5.0
SOFTWARE: Word Perfect 5.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION DATA:
APPLICATION UNMBER: US/09/498,272
FILING DATE: 04-Feb-2000
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: BIGGS, SUZANNE L.
REGISTRATION NUMBER: 30,158
REPERENCE/DOCKET NUMBER: 216/270
TELECOMMUNICATION INFORMATION:
TELEPHONE: (213) 489-1600
TELEFAX: (213) 955-0440
CORRESPONDENCE ADDRESS:
ADDRESSEE: Lyon & Lyon
STREET: 633 West Fifth Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEX: 67-3510

INFORMATION FOR SEQ ID NO: 60:
SEQUENCE CHARACTERISTICS:
LENGTH: 58 amino acids
TYPE: amino acid
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: peptide
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 59, Application US/09790264
Patent No. US20020028508A1
GENERAL INFORMATION:
APPLICANT: Holtzman, Douglas A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION
                                                                                                                                                                                                                                                                                                                                      storage
                                                                                               Suite 4700
                                                                                                                                                                                                                                ZIP: 90071
COMPUTER READABLE FORM:
                                                                                                                          CITY: Los Angeles
STATE: California
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 5
US-09-790-264-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-498-272-60
```

à

5

3

```
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                               ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-919-039-245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                        TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE:
                                                                                                                                                                                                                                                                         FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 195, Application US/09919039
Publication No. US20030108871A1
GERREAL INFORMATION:
TITLE OF INVENTION: GENES EXPRESSED IN TREATED HUMAN C3A LIVER CELL CULTURES
FILE REPERENCE: PA -0035 US
CURRENT APPLICATION NUMBER: US/09/919,039
CURRENT FILING DATE: 2002-09-09
PRIOR FILING DATE: 2000-07-28
NUMBER OF SEQ ID NOS: 401
SOFTWARE: PERL PROGram
SOFTWARE: PERL PROGram
SOFTWARE: PERL PROGram
SOFTWARE: PERL PROGRAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GGFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCR 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10 GGSCACAGSCKCKE----CKCTS-CKKCCCSCCPVG-CAK-CAQGCVCK 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 15.2%; Score 59.5; DB 11; Length 61; Best Local Similarity 34.7%; Pred. No. 26; Matches 17; Conservative 5; Mismatches 20; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
16.0%; Score 62.5; DB 10; Length 63;
Best Local Similarity 37.8%; Pred. No. 13;
Matches 17; Conservative 4; Mismatches 19; Indels
                                                                                                                                  Sequence 76, Application US/09950933A
Sequence 76, Application US/09950933A
Sequence 76, Application US/09950933A
Sequence 76, Application US/09950933A
GENERAL INFORMATION:
APPLICANT: Simmons, Carl R.
APPLICANT: Navarion.
TITLE OF INVENTION: Antimicrobial Peptides and Methods of
TITLE OF INVENTION: Antimicrobial Peptides and Methods of
FILE REFERENCE: 35718/238472
CURRENT APPLICATION NUMBER: US/09/950,933A
CURRENT FILING DATE: 2000-09-13
PRIOR FILING DATE: 2000-09-13
NUMBER: OF SEQ ID NOS: 99
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 76
LENGTH: 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; NAME/KEY: misc feature
; OTHER INFORMATION: Incyte ID No. US20030108871A1 2048551CD1
US-09-919-039-195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20 RCDGRCQRFCPNV-VPKP---LCIKICAPGCVCRLGYLRNKKKVC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4 QCGGQCTRRCSNTKYHKPCMFFCQKCCAK-CLCVPPGTYGNKQVC 47
17 GKCPKNP--PRSIGTCVELCSGDQSCPNIQKCCSNGCGHVCK 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 9
US-09-981-353-115
US-09-981-353-115
Sequence 115, Application US/09981353
Patent No. US20020160382A1
GENERAL INFORMATION:
APPLICANT: Lasek, Amy W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT
; ORGANISM: Arabidopsis thaliana
US-09-950-933A-76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-919-039-195
                                                                                                                          US-09-950-933A-76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
Sequence 245, Application US/09919039
Publication No. US20030108871A1
Fublication No. US20030108871A1
Fublication No. US20030108871A1
APPLICANT: Kaser, Matthew R.
TITLE OF INVENTION: GENES EXPRESSED IN TREATED HUMAN C3A LIVER CELL CULTURES
TITLE OF INVENTION: US/09/919,039
CURRENT APPLICATION NUMBER: US/09/919,039
CURRENT APPLICATION NUMBER: 60/222,113
PRIOR APPLICATION NUMBER: 60/222,113
PRIOR APPLICATION NUMBER: 60/222,113
PRIOR PILLING DATE: 2000-07-28
NUMBER OF SEQ ID NOS: 401
SOFTWARE: PREL PROGram
SOFTWARE: PREL PROGram
SOFTWARE: PREL PROGram
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ري
دي
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 32.6%; Pred. No. 42;
Matches 15; Conservative 6; Mismatches 20; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 GGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCR 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11 GSCACAGSCKCKE--CKCTS-CKKSCGSCCPVG-CAK-CAQGCICK 51
                                                                                                                                                                                                                                                                                                                                           ) NAME/KEY: misc feature
; OTHER INFORMATION: Incyte ID No. US20020160382A1 2685676CD1
US-09-981-353-115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 GGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCR 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11 GSCACAGSCKCKE--CKCTS-CKKSCCSCCPVG-CAK-CAQGCICK 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 32.6%; Pred. No. 42;
Matches 15; Conservative 6; Mismatches 20; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; NAME/KEY: misc feature
; OTHER INFORMATION: Incyte ID No. US20030108871A1 167772CD1
US-09-919-039-245
APPLICANT: Jones, David A.

TITLE OF INVENTION: GENES EXPRESSED IN COLON CANCER FILE REFERENCE: PA-0038 US
CURRENT APPLICATION NUMBER: US/09/981,353
CURRENT FILING DATE: 2001-10-11
NUMBER OF SEQ ID NOS: 194
SOFTWARE: PERL Program
SOFTWARE: PERL Program
LENGTH: 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 11
US-10-087-887-41
i. Sequence 41, Application US/10087887
i. Publication No. US20030198957A1
j. GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Zerhusen, Bryan D.
Komuves, Laszlo
Padigaru, Muralidhara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Topper, James N.
Shimkets, Richard A.
Leach, Martin D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tomlinson, James E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Kekuda, Ramesh
APPLICANT: Conley, Pamela B.
APPLICANT: Yang, Ruey-Bing
APPLICANT: Hart, Matthew
APPLICANT: Tomlinson, James I
```

```
FILE REFERENCE: PA-0035 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 14
US-09-919-039-272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-847-185-47
                                                                                                                                                                                                                                                                                              FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Kaser, Matthew R. ITLE OF INVENTION: GENES EXPRESSED IN TREATED HUMAN C3A LIVER CELL CULTURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
TITLE OF INVENTION: PROTEINS AND NUCLEIC ACIDS ENCODING SAME FILE REFERENCE: 21402-285
CURRENT APPLICATION NUMBER: US/10/087,887
CURRENT FILING DATE: 2002-03-01
PRIOR PAPLICATION NUMBER: 60/273,049
PRIOR FILING DATE: 2001-03-02
PRIOR FILING DATE: 2001-03-23
PRIOR FILING DATE: 2001-03-21
PRIOR PAPLICATION NUMBER: 60/277,791
PRIOR PILING DATE: 2001-03-21
PRIOR APPLICATION NUMBER: 60/281,248
PRIOR PILING DATE: 2001-04-03
PRIOR PILING DATE: 2001-04-10
PRIOR PLING DATE: 2001-04-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 37.5%; Pred. No. 53;
Matches 15; Conservative 5; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // NAME/KEY: misc feature
// OTHER INFORMATION: Incyte ID No. US20020160382A1 2757583CD1
US-09-981-353-120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----CVCRLGYLRNKKKVCVPRSKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10 GKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCR 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17 GSCKCKB--CKCTS-CKKSCCSCCPVG-CSK-CAQGCVCK 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Lasek, Amy W.
APPLICANT: Lasek, Amy W.
APPLICANT: Jones, David A.
TITLE OF INVENTION: GENES EXPRESSED IN COLON CANCER
FILE REFERENCE: PA-0039 US
CURRENT APPLICATION NUMBER: US/09/981,353
CURRENT FILING DATE: 2001-10-11
NUMBER OF SEQ ID NOS: 194
SOTTWARE: PERL PROGRAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 57; DB 12;
Pred. No. 37;
9; Mismatches 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 12
US-09-981-353-120
; Sequence 120, Application US/09981353
; Patent No. US2002016038241
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; Sequence 31, Application US/09919039; Publication No. US20030108871A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cn 14.6%;
1 Similarity 23.4%;
11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  34 PKPLCIKICAPG----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-087-887-41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-919-039-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQ ID NO 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
```

```
APPLICANT: SOO HOO, William
TITLE OF INVENTION: MEMBRANE-BOUND CYTOKINE COMPOSITIONS
COMPRISING GM-CSF AND METHODS OF MODULATING AN IMMUNE
RESPONSE USING SAME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 272, Application US/09919039
Publication No. US20030108871A1
GENERAL INFORMATION:
APPLICANT: Kaser, Matthew R.
ITILE OF INVENTION: GENES EXPRESSED IN TREATED HUMAN C3A LIVER CELL CULTURES
TITLE OF INVENTION: GENES EXPRESSED IN TREATED HUMAN C3A LIVER CELL CULTURES
CURRENT APPLICATION NUMBER: US/09/919,039
CURRENT FILING DATE: 2002-09-09
PRIOR PAPLICATION NUMBER: 60/222,113
PRIOR PAPLICATION NUMBER: 60/222,113
PRIOR PILING DATE: 2000-07-28
NUMBER OF SEQ ID NOS: 401
SOFTWARE: PERL PROGram
SOFTWARE: PERL PROGram
LENGTH: 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                        4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                     5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ņ
                                                                                                                                                                                                                                                                                                                                                                                                  Length 61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 61;
                                                                                                                                                                                                                                                                                    NAME/KEY: misc_feature; OTHER INFORMATION: Incyte ID No. US20030108871A1 3860413CD1US-09-919-039-31

    NAME/KEY: misc feature
    OTHER INFORMATION: Incyte ID No. US20030108871A1 2757583CD1
    US-09-919-039-272

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
ADDRESSEE: CAMPBELL & FLORES, LLP
STREET: 4370 La Jolla Village Drive, Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10 GKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCR 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17 GSCKCKE--CKCTS-CKKSCCSCCPVG-CAK-CAQGCICK 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10 GKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVCR 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17 GSCKCKE--CKCTS-CKKSCCSCCPVG-CSK-CAQGCVCK 51
                                                                                                                                                                                                                                                                                                                                                                                          14.5%; Score 56.5; DB 11; 35.0%; Pred. No. 53; tive 6; Mismatches 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 37.5%; Pred. No. 53;
Matches 15; Conservative 5; Mismatches 15;
CURRENT APPLICATION NUMBER: US/09/919,039
CURRENT FILING DATE: 2002-09-09
PRIOR APPLICATION NUMBER: 60/222,113
PRIOR FILING DATE: 2000-07-28
NUMBER OF SEQ ID NOS: 401
SOFTWARE: PERL PROGRAM
SEQ ID NO 31
LENGTH: 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 47, Application US/09847185
Patent No. US20020076392A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITY: San Diego
STATE: California
COUNTRY: United States
                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 35.0%
Matches 14; Conservative
                                                                                                                                                                                                         TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: PRT
ORGANISM: Homo sapiens
```

```
2;
                                                                                                                                                        Query Match 14.2%; Score 55.5; DB 9; Length 38;
Best Local Similarity 29.8%; Pred. No. 43;
Matches 14; Conservative 0; Mismatches 14; Indels 19; Gaps
2 GFGGLGGRGKCPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCVC 48
                                                                                                                                                                             à
```

Search completed: November 17, 2003, 08:22:15 Job time : 29 secs

1 ścicascicic-----craci-----accacccirc 28

```
US-08-465-380-61
  61, Appl
61, Appl
61, Appl
61, Appl
61, Appl
61, Appl
61, Appl
61, Appl
61, Appl
61, Appl
61, Appl
61, Appl
60,                                                                                                                                                                                                  (without alignments)
134.992 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 61, P
Sequence 61, P
Sequence 61, P
Sequence 400,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                391
1 GGFGGLGGRGKCPSNEIFSR......CRLGYLRNKKKVCVPRSKCG
                                                                                                                                                                        November 17, 2003, 08:14:53 ; Search time 21 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sued_patents AA:*
/cgn2_c/ptodata1/iaa/5A_COMB.pep:*
/cgn2_6/ptodata1/iaa/5B_COMB.pep:*
/cgn2_6/ptodata1/iaa/6A_COMB.pep:*
/cgn2_c/ptodata1/iaa/6B_COMB.pep:*
/cgn2_c/ptodata1/iaa/BECOMB.pep:*
/cgn2_c/ptodata1/iaa/PCTUS_COMB.pep:*
/cgn2_6/ptodata1/iaa/PCTUS_COMB.pep:*
                                GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-465-380-61

US-08-486-397-61

US-08-486-397-61

US-08-461-965-61

US-09-249-471-61

US-09-249-471-61

US-09-249-471-61

US-09-249-451-61

US-09-249-461-61

US-09-249-461-61

US-09-249-461-61

US-09-249-461-61

US-09-249-461-61

US-08-871-355A-400

US-08-871-355A-400

US-08-871-355A-400

US-08-871-355A-600

US-08-871-355A-600

US-08-465-390-600

US-08-461-965-600

US-08-461-965-600

US-08-461-965-600

US-08-461-965-600

US-08-461-965-600

US-08-461-965-600

US-08-461-965-600

US-08-461-965-600

US-08-461-965-600

US-08-49-471-600

US-08-49-471-600

US-09-249-471-600

US-09-249-471-600

US-09-249-471-600

US-09-249-471-600

US-09-249-471-600

US-09-249-471-600

US-09-249-471-600

US-09-249-481-600

US-09-249-471-600

US-09-249-471-600

US-09-249-471-600

US-09-249-471-600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                        328717 seqs, 42310858 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                            OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                              Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                         US-09-506-978-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq length: 0 seq length: 67
                                                                                                                                                                                                                                                                                                                                                                          BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB s
Maximum DB s
                                                                                                                                                                                                                                                                                                                              Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Result
No.
                                                                                                                                                                                Run on:
```

ALIGNMENTS

```
OSCUBLANCE 1900-10

Selection US/08465380

Patent No. 5863894

GENERAL INFORMATION:

APPLICANT: George P. Vlasuk, Patric H. Stanssens, APPLICANT: Oria H.L. Menesons, Max O. Lauwereys, APPLICANT: Yoris R. Laroche, Laurent S. Jespers, APPLICANT: Los Angeles STRET: Silve 4700

CITY: Los Angeles STRET: Silve 4700

CITY: Los Angeles STRET: California

COMPUTR: Tibe Angeles STRET: Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers, Jespers
```

```
Sequence 61, Application US/08486399 Patent No. 5866543
                                                                                                                                                                                                                                                                                                                                                                                                                                          ZIP: 90071
COMPUTER READABLE FORM:
                                           Patent No. 5866543
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                   90071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-486-399-61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-461-965-61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>.</u>
ت
                                                                                            'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4 CPANEEWRECGTPCEPKCNQPMP----DICTMNCIVDVCQCKEGYKRHETKGCL 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12 CPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCV-----CRLGYLRNKKKVCV 61
                                                                                                                                                                  4 CPANEEWRECGTPCEPKCNQPMP----DICTWNCIVDVCQCKEGYKRHETKGCL 53
                                                                                                                                       12 CPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCV----CRLGYLRNKKKVCV 61
                                                                                              10;
                                           21.0%; Score 82; DB 2; Length 61; 30.9%; Pred. No. 0.066; ive 9; Mismatches 19; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21.0%; Score 82; DB 2; Length 61; 30.9%; Pred. No. 0.066; tive 9; Mismatches 19; Indels
                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: George P. Vlasuk, Patric H. Stanssens,
APPLICANT: George P. Vlasuk, Patric H. Stanssens,
APPLICANT: Joris H.L. Mensens, Marc J. Lauwereys,
APPLICANT: Year R. Laroche, Laurent S. Jespers,
APPLICANT: Yamnick G.J. Gansemans, Matthew Moyle,
APPLICANT: Yamnick G.J. Gansemans, Matthew Moyle,
APPLICANT: Peter W. Bergum
TITLE OF INVENTION: NEMATODE-EXTRACTED ANTICOAGULANT
TITLE OF INVENTION: PROTEIN
NUMBER OF SEQUENCES: 357
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READBLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: storage
COMPUTER: IEM Compatible
COMPUTER: IEM Compatible
OPERATING SYGTEM: IEM P.C. DOS 5.0
SOFTWARE: Word Perfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/486,397
FILING DATE: June 5, 1995
CLASSIFTCATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION CORDER 18, 1994
ATTORNEY AGENT INFORMATION:
REGISTRATION NUMBER: 30,158
REFERENCE/DOCKET NUMBER: 213/269
TELECOMMUNICATION INFORMATION:
TELECHONE: (213) 955-0440
                                                                                                                                                                                                                                                                                                   Sequence 61, Application US/08486397
Patent No. 5866542
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE: Lyon & Lyon STREET: 633 West Fifth Street STREET: Suite 4700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Necator americanus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEX: 67-3510
INFORMATION FOR SEQ ID NO: 61:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     : 61 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17; Conservative
                                              Query Match 21.0
Best Local Similarity 30.9
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE: peptide ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Los Angeles
California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             90071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STATE: Ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-486-397-61
                                                                                                                                                                                                                                                                                    US-08-486-397-61
US-08-465-380-61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                            ò
```

RESULT 3

```
PREMENTON, GONGER, AND SELECT H. SCRABSERS,
APPLICANT: GONGER P. VLARUK, PARTIC H. SCRABSERS,
APPLICANT: GONGER P. VLARUK, PARTIC H. SCRABSERS,
APPLICANT: GONGER P. VLARUK, PARTIC H. SCRABSERS,
APPLICANT: GONGER P. VLARUK, PARTIC H. SCRABSERS,
APPLICANT: PREMENT BRIEF S. OBSESSES,
APPLICANT: PREMENT BRIEF S. OBSESSES,
ADDRESSES: LOAN & L. VON
TITLE OF INVENTION: PROTEIN
NUMBER OF SEQUENCES: 356
CORRESSORDERE LOAN & L. VON
TITLE OF INVENTION: PROTEIN
ADDRESSES: LOAN & L. VON
TITLE OF INVENTION: PROTEIN
ADDRESSES: LOAN & L. VON
TITLE OF INVENTION: PROTEIN
ADDRESSES: LOAN & L. VON
TITLE OF INVENTION: PROTEIN
ADDRESSES: LOAN & L. VON
TITLE OF INVENTION BRIEF S. S. OBSESTE, 144 MD
ADDRESSES: LOAN & L. VON
TITLE OF INVENTION BRIEF. B. S. OBSESTE, 15 APPLICATION BRIEF. B. S. OBSESTE, 15 APPLICATION BRIEF.
STREEM CONTRACT BROWNER: 0.15.A
APPLICATION BRIEF. B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. S. OBSESTE, B. OBSEST
```

```
12 CPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCV-----CRLGYLRNKKVCV 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: BETTON: DESCRIPTION OF THE PROTEASE TITLE OF INVENTION: NEWATODE-EXTRACTED SERINE PROTEASE TITLE OF INVENTION: INHIBITORS AND ANTICOAGULANT TITLE OF INVENTION: PROTEIN NUMBER OF SEQUENCES: 356
CORRESPONDENCE ADDRESS:
ADDRESSEE: 4,00 & Lyon STREET: 633 West Fifth Street STREET: Suite 4700
CITY: Los Angeles STREET: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 21.0%; Score 82; DB 2; Length 61; Best Local Similarity 30.9%; Pred. No. 0.066; Matches 17; Conservative 9; Mismatches 19; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Vlasuk, George Phillip
APPLICANT: Stanssens, Patrick Eric Hugo
APPLICANT: Messens, Joris Hilds Lieven
APPLICANT: Lauwereys, Marc Josef
APPLICANT: Laroche, Yves Rene
APPLICANT: Jancohe, Yves Rene
APPLICANT: Gansemans, Yannick Georges Jozef
APPLICANT: Moyle, Matthew
APPLICANT: Bergum, Peter W.
COMPUTER READABLE FORM:

MEDIUM TYPE: 3.5" Diskette, 1.44 Mb MEDIUM TYPE: storage COMPUTER: 1EM Compatible OPERATING SYSTEM: 1EM Compatible OPERATING SYSTEM: 1EM Compatible OPERATING SYSTEM: 1EM C.C. DOS 5.0 SOFTWARE: Word Perfect 5.1 CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/634,641 FILING DATE: April 19, 1996 PRILING DATE: October 17, 1995 APPLICATION NUMBER: 08/486,399 FILING DATE: June 5, 1995 APPLICATION NUMBER: 08/486,397 FILING DATE: June 5, 1995 APPLICATION NUMBER: 08/465,380 FILING DATE: June 5, 1995 APPLICATION NUMBER: 08/461,965 FILING DATE: June 5, 1995 APPLICATION NUMBER: 08/461,965 FILING DATE: June 5, 1995 APPLICATION NUMBER: 08/461,965 FILING DATE: June 5, 1995 APPLICATION NUMBER: 08/36,110 FILING DATE: June 5, 1995 APPLICATION NUMBER: 08/36,110 FILING DATE: June 5, 1995 APPLICATION NUMBER: 08/36,110 FILING DATE: June 5, 1995 APPLICATION NUMBER: 30,158 FILING DATE: June 5, 1995 APPLICATION NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER: 30,158 FERENCE/DOCKET NUMBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-249-471-61
; Sequence 61, Application US/09249471
; Patent No. 6040441
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: peptide
ORIGINAL SOURCE:
ORGANISM: Necator americanus
US-08-634-641-61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12 CPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCV----CRLGYLRNKKKVCV 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4 CPANEEWREGGTPCEPKCNQPMP----DICTWNCIVDVCQCKEGYKRHETKGCL 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Vlasuk, George P. Vlasuk
APPLICANT: Stanssens, Patrick Eric Hugo
APPLICANT: Mensens, Joris Hilda Lieven
APPLICANT: Laroche, Yves Rene
APPLICANT: Laroche, Yves Rene
APPLICANT: Jespers, Laurent Stephane
APPLICANT: Gansemans, Yannick Georges Jozef
APPLICANT: Bergum, Peter W.
TITLE OF INVENTION: NEMATODE-EXTRACTED ANTICOAGULANT
TITLE OF INVENTION: PROTEIN
NUMBER OF SEQUENCES: 356
CORRESPONDENCE ADDRESS:
STRRFF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
21.0%; Score 82; DB 2;
Best Local Similarity 30.9%; Pred. No. 0.066;
Matches 17; Conservative 9; Mismatches 1:
                                                                                                                                                                                                                        COMPUTER READABLE FORM:

COMPUTER READABLE FORM:

MEDIUM TYPE: atcrage

COMPUTER: IBM Compatible

OPERATING SYSTEM: IBM P.C. DOS 5.0

SOFTWARE: Word Berfect 5.1

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/461,965

FILING DATE: June 5, 1995

CLASSIFICATION: 530

PRICA PAPLICATION DATA:

APPLICATION NUMBER: 08/326,110

FILING DATE: October 18, 1994

ATTORNEY AGENT TINFORMATION:

NAME: BIGGS, SUZANNE L.

REGISTRATION NUMBER: 30,158

REFERENCE/DOCKET NUMBER: 31,158

TELEPHONE: (213) 955-0440
         CORRESPONDENCE ADDRESS:
ADDRESSE: Lyon & Lyon
STREET: 633 West Fifth Street
STREET: Suite 4700
CITY: Los Angeles
STATE: California
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: Lyon & Lyon
STRERT: 613 West Fifth Street
STREET: Suite 4700
CITY: Los Angeles
CITY: Los Angeles
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE: peptide ORIGINAL SOURCE: ORGANISM: Necator americanus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEX: 67-3510
INPORMATION FOR SEQ ID NO: 61:
SEQUENCE CHARACTERISTICS:
LENGTH: 61 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-461-965-61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-634-641-61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
```

2,

```
12 CPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCV-----CRLGYLRNKKKVCV 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4 CPANEEWRECGTPCEPKCNQPMP-----DICTMNCIVDVCQCKEGYKRHETKGCL 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 21.0%; Score 82; DB 3; Length 61; Best Local Similarity 30.9%; Pred. No. 0.066; Matches 17; Conservative 9; Mismatches 19; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Bergum, Peter W.
TITLE OF INVENTION: NEMATODE-EXTRACTED SERINE PROTEASE
TITLE OF INVENTION: INHIBITORS AND ANTICOAGULANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Vlasuk, George Phillip
APPLICANT: Stanssens, Patrick Eric Hugo
APPLICANT: Messens, Joris Hilda Lieven
APPLICANT: Lauwereys, Marc Josef
APPLICANT: Laroche, Yves Rene
APPLICANT: Geopers, Laurent Stephane
APPLICANT: Gansemans, Yannick Georges Jozef
APPLICANT: Moyle, Matthew
                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: Storage
COMPUTER: IBM Compatible
COMPUTER: IBM Compatible
CORREATING SYSTEM: IBM P.C. DOS 5.0
SOFTWARE: WORD PRIFECT 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/249,472
                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:

RICATION NOMBER: 05/05/245,725

RILING DATE: APALICATION NUMBER: 08/809,455

FILING DATE: APALI 17, 1995

APPLICATION NUMBER: PCT/US95/13231

FILING DATE: October 17, 1995

APPLICATION NUMBER: 08/486,399

FILING DATE: June 5, 1995

APPLICATION NUMBER: 08/466,965

FILING DATE: June 5, 1995

APPLICATION NUMBER: 08/466,965

APPLICATION NUMBER: 08/466,965

APPLICATION NUMBER: 08/366,110

FILING DATE: June 5, 1995

APPLICATION NUMBER: 08/366,110

FILING DATE: October 18, 1994

ATTORNEY/AGRAT INFORMATION:

REGISTRATION NUMBER: 30,158

REFERENCE/DOCKET NUMBER: 216/270

TELECPAN: (213) 955-0440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 61, Application US/09249451
Patent No. 6087487
GENERAL INFORMATION:
633 West Fifth Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; ORGANISM: Necator americanus US-09-249-472-61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEX: 67-3510
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 61 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: peptide
ORIGINAL SOURCE:
                                                       Los Angeles
California
                                                                                                               U.S.A.
                                                                                                                                    90071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-249-451-61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12 CPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCV-----CRLGYLRNKKKVCV 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Vlasuk, George Phillip
APPLICANT: Stanssens, Patrick Eric Hugo
APPLICANT: Messens, Patrick Eric Hugo
APPLICANT: Lawwereys, Marc Josef
APPLICANT: Laroche, Yves Rene
APPLICANT: Jespers, Laurent Stephane
APPLICANT: Ganesmans, Yannick Georges Jozef
APPLICANT: Moyle, Matthew
APPLICANT: Bergum, Peter W
APPLICANT: Bergum, Peter W
APPLICANT: Bergum, Peter W
APPLICANT: Peter W
APPLICANT: PETER PROTENSION: INHIBITORS AND ANTICOAGULANT
TITLE OF INVENTION: INHIBITORS AND ANTICOAGULANT
TITLE OF ENVENTION: PROTEIN
NUMBER OF SEQUENCES: 356
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 21.0%; Score 82; DB 3; Length 61; Best Local Similarity 30.9%; Pred. No. 0.066; Matches 17; Conservative 9; Mismatches 19; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Vlasuk, George Phillip
Stanssens, Patrick Eric Hugo
Messens, Joris Hilda Lieven
Lauwereys, Marc Josef
Laroche, Yves Rene
Jespers, Laurent Stephane
Gansemans, Yamnick Georges Jozef
Moyle, Matthew
                                                                                                                  MEDIUM TYPE: storage
COMPUTER: IBM Compatible
OPERATING SYSTEM: IBM P.C. DOS 5.0
SOFTWARE: Word Perfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/249,471
FILING DATE: PRION PERION DATA:
APPLICATION NUMBER: 08/00,455
FILING DATE: April 17, 1997
APPLICATION NUMBER: 08/486,399
FILING DATE: October 17, 1995
APPLICATION NUMBER: 08/486,399
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/466,397
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/466,397
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
APPLICATION NUMBER: 08/461,965
APPLICATION NUMBER: 08/461,965
APPLICATION NUMBER: 08/461,965
APPLICATION NUMBER: 08/306,110
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/306,110
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/306,110
FILING DATE: Ottober 18, 1994
ATTORNEY FORENT FORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION FOR SEQ ID NO: 61:
SEQUENCE CHARACTERISTICS:
LINGGRADATION FOR SEQ ID NO: 61:
LENGTH 161 amino acids
                             ZIP: 90071
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 61, Application US/09249472
Patent No. 6046318
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; ORGANISM: Necator americanus US-09-249-471-61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Lyon & Lyon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: peptide ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       amino acid
GY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-249-472-61
  COUNTRY:
```

à

'n

```
12 CPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCV----CRLGYLRNKKKVCV 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: ROYLE, WEALTHAN TITLE OF INVENTION: NEWATODE-EXTRACTED SERINE PROTEASE TITLE OF INVENTION: NEWATODE-EXTRACTED SERINE PROTEINS TITLE OF INVENTION: NEWATODE-EXTRACTED SERINE PROTEIN INVENTION: NEWATODE-EXTRACTED SERINE PROTEIN INVENTION: NEWATODE SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES SIGNORES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 21.0%; Score 82; DB 3; Length 61; Best Local Similarity 30.9%; Pred. No. 0.066; Matches 17; Conservative 9; Mismatches 19; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Stanssens, Patrick Eric Hugo
Messens, Joris Hilda Lieven
Lauwereys, Marc Josef
Laroche, Yves Rene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: OCTOBER 18, 1994
ATTORNEY/AGENT INFORMATION:
NAME: BIGGS, SUZANB L.
REGISCHRATON NUMBER: 30,158
REFRERENCY/DOCKET NUMBER: 216/270
TELEPHONE: (213) 489-1600
TELEPHONE: (213) 955-0440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-249-461-61
; Sequence 61, Application US/09249461
; Patent No. 6096877
; PAPLICANT: Vlasuk, George Phillip
; APPLICANT: Stanssens, Patrick Eric
; APPLICANT: Messens, Joris Hilda Lif;
; APPLICANT: Lauvereys, Marc Josef
; APPLICANT: Laroche, Yves Rene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Vlasuk, George Phillip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Necator americanus
            Moyle, Matthew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEX: 67-3510
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: linear
MOLECULE TYPE: peptide
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: am
TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-809-455-61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19; Indels 10; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12 CPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCV-----CRLGYLRNKKKVCV 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21.0%; Score 82; DB 3; Length 61; 30.9%; Pred. No. 0.066; tive 9; Mismatches 19; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Lauwereys, Marc Josef
Laroche, Yves Rene
Labers, Laurent Stephane
Gansemans, Yannick Georges Jozef
                                                                                                                                            STREET: Suite 4700
CITY: Los Angeles
STATE: California
COUNTRY: U.S.A.
ZIP: 90071
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: STORME
MEDIUM TYPE: DISKETTE, 1.60
FRATING SYSTEM: IBM P.C. DOS 5.0
SOFTWARE: Word Perfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/249,451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 61, Application US/08809455
Patent No. 6090916
GENERAL INFORMATION:
APPLICANT: Vlasuk, George Phillip
APPLICANT: Stanssens, Patrick Eric Hugo
APPLICANT: Messens, Joris Hilda Lieven
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
PRIOR APPLICATION NUMBER: 08/09/455
APPLICATION NUMBER: 08/09,455
FILING DATE: APACINI 17, 1995
APPLICATION NUMBER: PCT/US95/13231
FILING DATE: October 17, 1995
APPLICATION NUMBER: 08/486,399
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/465,380
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/26,110
FILING DATE: June 5, 1995
APPLICATION NUMBER: 1995
APPLICATION NUMBER: 1994
ATTORNEY/AGENT INFORMATION:
NAME: BIGGS SIZANIE L.
REGISTRATION NUMBER: 30,158
REFERRNCE/DOCKET NUMBER: 216/270
TELECHONE: (213) 489-1600
TELECHONE: (213) 489-1600
TELECHONE: (213) 489-1600
TITLE OF INVENTION: PROTEIN
NUMBER OF SEQUENCES: 356
CORRESPONDENCE ADDRESS:
ADDRESSEE: Lyon & Lyon
STREET: 633 West Fifth Street
STREET: Suite 4700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Necator americanus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEX: 67-3510
INFORMATION FOR SEQ ID NO: 61:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 61 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECTLE TYPE: peptide
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 30.9'
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 9
US-08-809-455-61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-249-451-61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
```

2;

ò

```
12 CPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCV----CRLGYLRNKKKVCV 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4 CPANEEWRECGTPCEPKCNOPMP----DICTMNCIVDVCOCKEGYKRHETKGCL 53
...essens, Joris Hilda Lieven
Joris Hilda Lieven
Lauwereys, Marc Josef
APPLICANT: Laroche, Yves Rene
APPLICANT: Gansemans, Yannick Georges Jozef
APPLICANT: Moyle, Matthew
TITLE OF INVENTION: INHIBITORS AND ANTICOAGULANT
TITLE OF INVENTION: INHIBITORS AND ANTICOAGULANT
NUMBER OF SEQUENCES: 356
CORRESPONDENCE ADDRESS:
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
STREET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 21.0%; Score 82; DB 3; Length 61; Best Local Similarity 30.9%; Pred. No. 0.066; Matches 17; Conservative 9; Mismatches 19; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: storage
COMPUTER: IBM Compatible
OPERATING SYSTEM: IBM P.C. DOS 5.0
SOFTWARE: Word Perfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/249,448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE:

PRIOR APPLICATION NOMBER: 05/07/215/215

PRIOR APPLICATION NOMBER: 08/809,455

PILING DATE: APTI 17, 1995

APPLICATION NUMBER: PCT/US95/13231

FILING DATE: October 17, 1995

APPLICATION NUMBER: 08/486,399

FILING DATE: June 5, 1995

APPLICATION NUMBER: 08/466,380

FILING DATE: June 5, 1995

APPLICATION NUMBER: 08/46,965

PILING DATE: June 5, 1995

APPLICATION NUMBER: 08/46,965

FILING DATE: June 5, 1995

APPLICATION NUMBER: 08/36,110

FILING DATE: October 18, 1994

ATTORNEY/AGENT INFORMATION:

REGISTRATION NUMBER: 30,158

REFERENCE/DOCKET NUMBER: 30,158

REFERENCE/DOCKET NUMBER: 30,158

REFERENCE/JOCKET NUMBER: 30,158

REFERENCE/JOCKET NUMBER: 31,1594

ATTORNEY/AGENT INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:

TELECOMMONICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: Lyon & Lyon
STREET: 633 West Fifth Street
STREET: Suite 4700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Necator americanus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEX: 67-3510
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 61 amino acids
TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE: peptide ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: Los Angeles
STATE: California
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-249-448-61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 12
US-09-249-473-61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4 CPANEEWRECGTPCEPKCNQPMP----DICTMNCIVDVCQCKEGYKRHETKGCL 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12 CPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCV----CRLGYLRNKKKVCV 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10;
                                                                                                                                                APPLICANT: Moyle, Matthew
APPLICANT: Moyle, Matthew
APPLICANT: Bergum, Peter W.
TITLE OF INVENTION: INHIBITORS AND ANTICOAGULANT
TITLE OF INVENTION: INHIBITORS AND ANTICOAGULANT
TITLE OF INVENTION: PROTEIN
NUMBER OF SEQUENCES: 356
CORRESPONDENCE ADDRESS:
ADDRESSEE: ADDRESSE:
STREET: 633 West Fifth Street
STREET: Suite 4700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 21.0%; Score 82; DB 3; Length 61; Best Local Similarity 30.9%; Pred. No. 0.066; Matches 17; Conservative 9; Mismatches 19; Indels
                                                                            Jespers, Laurent Stephane
Gansemans, Yannick Georges Jozef
Moyle, Matthew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:

PRIOR APPLICATION DATA:

APPLICATION NUMBER: 08/809,455
FILING DATE: APPLILIT, 1997
APPLICATION NUMBER: PCT/US95/13231
FILING DATE: October 17, 1995
APPLICATION NUMBER: 08/486,399
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/466,380
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/466,380
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/326,110
FILING DATE: JUNE 5, 1995
APPLICATION NUMBER: 08/326,110
FILING DATE: JUNE 5, 1995
ATTONNEY/AGENT INFORMATION:
NAME: BIGGS, SUZANNE L.
REGISTRATION NUMBER: 30,158
REFERENCE/DOCKET NUMBER: 30,158
REFERENCE/DOCKET NUMBER: 30,158
REFERENCE/DOCKET NUMBER: 30,158
TELEFONNE: (213) 489-1600
TELECOMMUNICATION INFORMATION:
TELEFA: 67-3510
INFORMATION FOR SEO ID NO: 61:
FENEN: 67-3510
INFORMATION FOR SEO ID NO: 61:
FENEN: 67-3510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZIP: 90071
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM Compatible
OPERATING SYSTEM: IBM P.C. DOS 5.0
SOFTWARE: Word Perfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/249,461
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 61, Application US/09249448
Patent No. 6121435
GENERAL INFORMATION:
APPLICANT: Vlasuk, George Phillip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOUGLOST: Annual MOLECULE TYPE: peptide ORIGINAL SOURCE: ORGANISM: Necator americanus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET: Suite 4700
CITY: Los Angeles
STATE: California
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-249-448-61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-249-461-61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH:
```

ñ

ð 셤

Sequence 61, Application US/09249473

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17.4%; Score 68; DB 2; Length 47; 55.6%; Pred. No. 1.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6; Indels
                                                                                                                                                                                                                                                                                                                             STATE: Georgiaa
COUNTRY: USA
ZIP: 30309-3450

ZIP: 30309-3450

COMPUTER READABLE FORM:
MEDIUM TYRE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30

CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/637,759B
FILING DATE: 03-MAY-1996
CLASSIFICATION DATA:
APPLICATION NUMBER: PCT/GB95/02875
FILING DATE: 11-DEC-1995
CLASSIFICATION WIMBER: PCT/GB95/02875
FILING DATE: 11-DEC-1995
CLASSIFICATION NUMBER: 31,284
REFERENCE/DOCKET NUMBER: 31,284
REGISTRATION NUMBER: 31,284
REFERENCE/DOCKET NUMBER: 31,284
REFERENCE/DOCKET NUMBER: 31,284
REFERENCE/DOCKET NUMBER: 31,284
REFERENCE/DOCKET NUMBER: 31,284
REFERENCE/DOCKET NUMBER: 31,284
REFERENCE/DOCKET NUMBER: 31,284
REFERENCE/DOCKET NUMBER: 31,284
REFERENCE/DOCKET NUMBER: 31,284
REFERENCE/DOCKET NUMBER: 31,284
REFERENCE/DOCKET NUMBER: 31,284
REFERENCE/DOCKET NUMBER: 31,284
REFERENCE/DOCKET NUMBER: 31,284
REFERENCE/DATENISTICS:
INFORMATION POR SEQ ID NO: 400:
SEQUENCE CHARACTERISTICS:
LENGTH: 47 amino acide
TYPE: amino acide
US-08-67-759B-400

| Sequence 400, Application US/08637759B
| Patent No. 587693L
| GENERAL INFORMATION:
| APPLICANT: David William Holden
| TITLE OF INVENTION: Identification of Genes
| NUMBER OF SEQUENCES: 501
| CORRESPONDENCE ADDRESS:
| ADDRESSER: Patrea L. Pabst
| STREET: 1200 West Peachtree Street
| STREET: 1201 West Peachtree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 14
US-08-971-355A-400
; Sequence 400, Application US/08871355A
; Patent No. 6015669
; GENERAL INFORMATION:
; APPLICANT: David William Holden
; ITLE OF INVENTION: Identification of Genes
; NUMBER OF SEQUENCES: 501
; CORRESPONDENCE ADDRESS:
; ADDRESSE: Patrea L. Pabst
; STREET: 1201 West Peachtree Street
; STREET: 2000 One Atlantic Center
; STREET: 2000 One Atlantic Center
; TYPE Atlanta
; STREET: 2010 West Peachtree Street
; CITY: Atlanta
; CITY: Atlanta
; CITY: Atlanta
; CITY: Atlanta
; CITY: Atlanta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12 CPSNEIFSRCDGRCQRFC 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30 CPAGKPLSRCDGRCDEIC 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 55.6'
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                               CITY: Atlanta
STATE: Georgia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-637-759B-400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 CPANEEWREGGTPCEPKCNQPMP----DICTMNCIVDVCQCKEGYKRHETKGCL 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12 CPSNEIFSRCDGRCQRFCPNVVPKPLCIKICAPGCV----CRLGYLRNKKVCV 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
21.0%; Score 82; DB 4; Length 61;
Best Local Similarity 30.9%; Pred. No. 0.066;
Matches 17; Conservative 9; Mismatches 19; Indels
                                                                                                                                                                                                                                     TITLE OF INVENTION: NEMATORE-EXTRACTED SERINE PROTEASE
TITLE OF INVENTION: INHIBITORS AND ANTICOAGULANT
TITLE OF INVENTION: PROTEIN
NUMBER OF SEQUENCES: 356
CORRESPONDENCE ADDRESS:
ADDRESSER: Lyon & Lyon
STREET: Suite 4700
To Vlasuk, George Phillip
Stanssens, Patrick Eric Hugo
Marsens, Joris Hilda Lieven
Lauwereys, Marc Josef
Laroche, Yves Rene
Geners, Laurent Stephane
Genes, Laurent Stephane
Genes, Marthew
Marthew
Marthew
Bergum, Peter W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb MEDIUM TYPE: 6.00 ECOMPUTER: 1 EN COMPATING SYSTEM: 1 EM P.C. DOS 5.0 SOFTWARE: WORD PERFECT 5.1 CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/249,473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PELLING DATE:
PRIOR APPLICATION NOMBER: 09/09/245,
PRIOR APPLICATION NUMBER: 08/09,455
FILING DATE: APTH1 17, 1997
APPLICATION NUMBER: PCT/0895/13231
FILING DATE: October 17, 1995
APPLICATION NUMBER: 08/486,399
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/466,380
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/461,965
FILING DATE: June 5, 1995
APPLICATION NUMBER: 08/326,110
FILING DATE: OCTOBER: 08/326,110
FILING DATE: OCTOBER: 08/326,110
FILING DATE: OCTOBER: 08/326,110
FILING DATE: OCTOBER: 08/326,110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          216/270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Necator americanus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: BIGGS, SUZANNE L.
REGISTRATION NUMBER: 30,158
REFERENCE/DOCKET NUMBER: 21.
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEX. 67-3510
INFORMATION FOR SEQ ID NO: 61:
SEQUENCE CHARACTERISTICS:
LENGTH: 61 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (213) 489-1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE: (213) 955-0440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: peptide ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                          STREET: Suite 4700
CITY: Los Angeles
STATE: California
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: amin
TOPOLOGY:
                                                                                                                                                              APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-249-473-61
                                                            APPLICANT:
```

ö

Пр à

; 0

0; Gaps

```
17.4%; Score 68; DB 4; Length 47; 55.6%; Pred. No. 1.4; tive 2; Mismatches 6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Search completed: November 17, 2003, 08:17:59 Job time : 22 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12 CPSNEIFSRCDGRCQRFC 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30 CPAGKPLSRCDGRCDEIC 47
           (404) 873-8794
                                      TELEFAX: (404) 873-8795
INFORMATION FOR SEQ ID NO: 400
SEQUENCE CHARACTERISTICS:
LENGTH: 47 amino acids
STREANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 55.6
Matches 10; Conservative
                                                                                                                                                                                                                                                           TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: NO
       TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                              US-09-201-945-400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 17.4%; Score 68; DB 3; Length 47; Best Local Similarity 55.6%; Pred. No. 1.4; Matches 10; Conservative 2; Mismatches 6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-201-945-400

; Sequence 400, Application US/09201945
; Patent No. 6342215.
GENERAL INFORMATION:
TITLE OF INVENTION: Identification of Genes
NUMBER OF SEQUENCES: 501
CORRESPONDENCE ADDRESS:
ADDRESSEE: Patrea L. Pabst
STREET: 2800 One Atlantic Center
STREET: 1201 West Peachtree Street
CITY: Atlanta
STREET: USA
COUNTRY: Georgia
COUNTRY: READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER READABLE FORM:
MEDIUM TYPE: Potentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/201,945
FILING DATE:
CLASSIFICATION DATA:
APPLICATION NUMBER: 08/637,759
FILING DATE:
CLASSIFICATION NUMBER: 08/637,759
FILING PATE:
CLASSIFICATION NUMBER: OR/0977.759
                      COMPUTER REALABLE FORM:

MEDIUM TYPE: FIDEPPY disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/NM-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/871,355A
FILING DATE: 09-UNN-1997
CLASSIFICATION NUMBER: US/08/871,355A
FILING DATE: 10-UNC-1995
CLASSIFICATION NUMBER: PCT/GB95/02875
FILING DATE: 11-DEC-1995
CLASSIFICATION NUMBER: RPMS 101 CON
TELECOMMUNICATION NUMBER: RPMS 101 CON
TE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: Pabst, Patrea L.
'REGISTRATION NUMBER: 31,284
REFERENCE/DOCKET NUMBER: RPMS 101
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30 CPAGKPLSRCDGRCDEIC 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12 CPSNEIFSRCDGRCQRFC 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 47 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: NO
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-871-355A-400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gg
```